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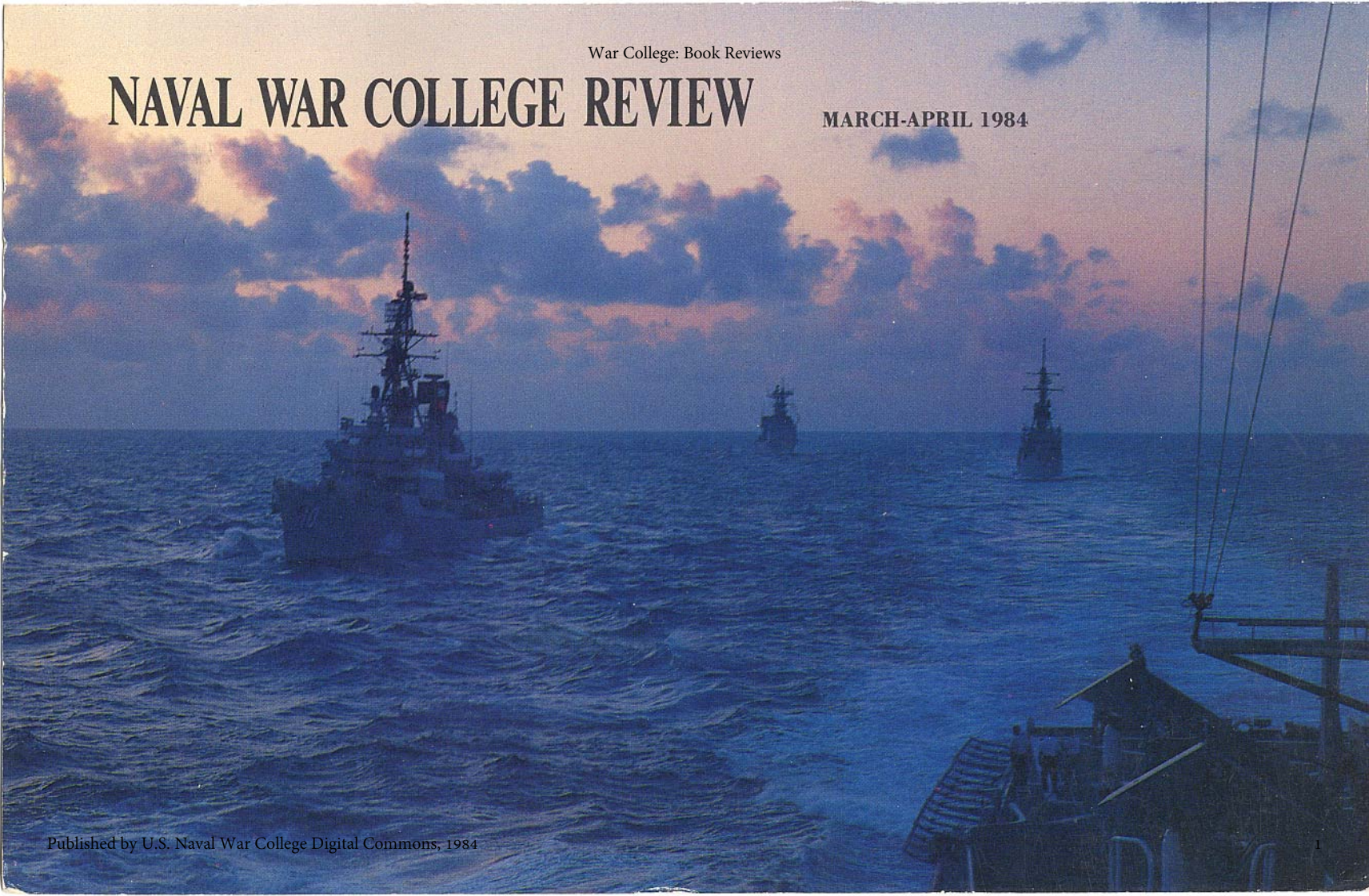

NAVAL WAR COLLEGE REVIEW

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Cover: Destroyers at dusk; the *Sampson* (DDG 10), *Semmes* (DDG 18), and *Caron* (DD 970). Photo by Frank Uhlig, Jr.

President's Notes

This year the Naval War College is 100 years old. It is appropriate to reflect on the role and effect of the college as we begin our second century of service to the Navy—where it has been, where it is today and where it is headed. In the hundred years since its founding, the perceived relevance of the War College to current maritime problems and thought has varied considerably, but one theme has been constant. Admiral Luce, in founding an institution wherein naval officers could "research all matters concerning war," established a broad charter. It was one which left no doubt that this should be the preeminent institution in the development of maritime strategy. Though the need for such an institution is self-evident to us, in hindsight, this was not true in the 1880s when Luce's best persuasive powers were necessary to overcome the widespread conviction that the best school for sailors was at sea—there and nowhere else.

The success of Luce's efforts in establishing the college on a sound intellectual foundation has clearly paid great dividends to this nation and the Navy over the last hundred years. We know that the studies and war games conducted here over the decades have aided the Navy's leadership recurrently and immeasurably in both crisis and in war, paying many times over the nation's investment.

It took years before the permanence of the Naval War College as an institution could be taken for granted. It took even longer for it to be considered a prime requirement for officers reaching the highest ranks. And even then, its preeminent place in the career pattern in the 1930s became endangered by many post-World War II developments, including the intense operational demands placed upon the fleet after the Korean War. It is highly

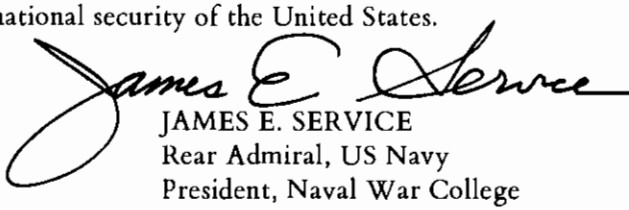
satisfactory to be able to record the revitalizing effect on the Naval War College which has come about because of the efforts of the present and immediate past CNO. It comes at an excellent time when the need for a well thought-out and relevant US maritime strategy is clear, when the need for profound and informed thinking on these matters has never been greater. The War College presently finds itself deeply involved in formulating and articulating our present maritime strategy and what it must be tomorrow if we are to persevere and prevail in either deterrent or war fighting terms. This renewed vitality shows itself in many ways:

- First in the renewed commitment to send our very best officers to Newport; and to mold career patterns which include a year of "graduate study" in classic military arts.
- In the spirit and vitality of a faculty which finds that the new found responsiveness to its thinking is the best possible stimulus to even greater contributions.
- In the sense of purpose and enthusiasm of our students who are increasingly pursuing difficult issues with new found energy and direction.
- In the strong intellectual repute of the college which attracts the best minds in the country to its faculty.
- In the willingness of important decision makers to visit the War College and contribute to the intellectual environment.
- In the enthusiasm of the Naval War College Foundation to support and enhance the intellectual life of the campus.
- In the renewed vitality of the Naval War Gaming Center which now designs, plans and executes games for the highest decision making levels, civilian and military, in the government.
- In the advanced research of the Strategic Studies Group (now in its third year) in concentrating the efforts of a talented group of officers on areas of special concern to the CNO.
- In the increasing number of command experienced officers seeking entry to the college.
- In the fact that Admiral Watkins has chosen NWC as the site for a recurring CinCs Conference and has used the facilities in unique ways to probe deeply into maritime strategic issues.
- And lastly, in the remarkably improved participation and contribution of our off-campus and correspondence course students.

This is indeed a lengthy litany of indicators of the vitality of the Naval War College. If you share with me this sense of the quickened pulse of the campus then you will understand the importance of the renaissance of thought and activity which is occurring here now. It is very difficult to overestimate the potential contribution of these intellectual efforts to the Navy and our nation. Indeed, in some ways we hope we shall never find out. However, if pressed, we will know that those entrusted with developing and carrying out

a successful maritime strategy will, like those officers of the past, be able in retrospect to see that their success might never have occurred if the Naval War College had not prepared them for the challenges which lay ahead. These are my thoughts as we enter the second century of the War College's existence. They also reflect my view of its purpose. As this centennial year unfolds, I am sure you will find many interesting articles in this and other publications about this outstanding institution.

Here is to a second century of service. May the Naval War College rise to even greater efforts, reach more profound perceptions, and make even greater contributions to the national security of the United States.



JAMES E. SERVICE
Rear Admiral, US Navy
President, Naval War College

The Technology of Command

Dr. Eberhardt Rechtin

Who was it who said, "My commander in chief may make me an admiral, but only communications can put me in command"? It could have been an aviator. It certainly could have been a fleet commander. It demonstrably was the thinking of the German Commander-in-Chief, U-Boats, Karl Doenitz in World War II. His story is worth retelling, familiar as it is, because it dramatically illustrates the strengths and dangers of the technology of command.[1]

Admiral Doenitz was recognized within the Allied Command as probably the most dangerous military opponent the Allies faced. As Samuel Eliot Morison stated in his history of the US Navy during World War II, "Let us not forget that the initial successes and surprises effected by the U-boats fell not far short of rendering Germany invincible on the seas while her armies were carrying everything before them on the continent of Europe."[2] Doenitz was a brilliant and aggressive strategist who used coordinated, massed attacks by his submarines to wreak havoc on Allied convoys. In two months in early 1943 he concentrated 40 U-boats against convoys HX 229 and SC 122 to sink 21 ships, with the loss of only one U-boat. Ninety-seven Allied ships were sunk in only 20 days in that period. He had two advantages: he had a good HF radio network to and among the U-boats, and his intelligence service had cracked the Admiralty codes, which gave him the location of the convoys with precision. That part of his story is not unique. The US Navy in the Pacific had the same advantages and produced the same results.[3]

However, there is a second part to the story. The British, picking up work begun by the Poles and the French, had cracked *his* codes. Doenitz was well aware of the risks he was taking in his daily use of the submarine communications network. The dismaying operational turnabout which in two months in the spring of 1943 caused the loss of 56 U-boats led to intensive investigations, which specifically considered the possibility that the codes had been cracked. The people who built and used the Enigma code machines maintained, as one would expect, that their codes were uncrackable in any reasonable period of time. But critically, another group provided a plausible

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alternative explanation which led to the fatal conclusion that the codes were safe. That group showed that a combination of Allied shore-based HF/DF and airborne radar could produce the observed operational results, and so the codes were absolved.

"Does counter-C^3 work? Ask the Syrians what the Israelis did to them in the Lebanese War. Ask the Czechs what the Soviet bloc countries did to them in the 1968 invasion."

The alternative explanation is interesting for two reasons. First, it was indeed the "cover" for the true situation not only for the period of World War II but also for 30 years thereafter. This is not to discount the value of HF/DF and the radars and the people who operated them so well. They certainly helped. But the long-range HF/DF ashore was not accurate enough and the radar was too limited in range to consistently provide the precision localization necessary for the extraordinary kill rate. The German analysts made an understandable mistake. They assumed that their enemy's equipment was better than it was, and in the process they missed the real danger. But we should not be too critical. The Germans wanted, indeed *had*, to believe that their codes were safe. The implications otherwise were horrendous. Nor should we be too self-satisfied today. We too want to believe our codes are safe. We want to believe that our submarines are quiet and that the ocean is opaque. We want to believe that there are no moles in the CIA and certainly not in the US Navy.

Some historians have disparaged Doenitz by implying that he was foolish to use so much communications to and within his fleet—a perspective that is plausible if one believes that HF/DF on communications from the submarines was the key to the Germans' defeat. By extension one might say, "the less communications, the better." These historians have a point, but they go too far. Doenitz could not have concentrated 40 submarines in just the right place at just the right time without communications, nor could he have used infrequent communications just before a strike without alerting the Allies that something was up. No, simply less communications is not the answer. The right amount of communications is a balance of gains and risks, both of which, unfortunately for the commander, are uncertain.

Now, 40 years after World War II, the commander's decisions are at least as crucial and much more complex. Global surveillance systems coupled with long-range weapons could soon make the decision whether to transmit or to receive messages a matter of life or death within less than an hour anywhere on the globe. And this is true whether one is attacking or defending. Today's commander has far more communications, command, control, and intelligence

(C^3I)* assets at his command than his command than his predecessors. These new assets have built-in opportunities, brilliantly illustrated by recent Israeli successes, and built-in risks, such as were reportedly a concern during the US rescue attempt in Iran. These C^2 assets—the technology of command—are far more important for commanders to understand than ever before.

This essay has four parts. The first is an update on the new technologies of command. Because of their general familiarity, this will be kept brief. My purpose is to reinforce what you already know—that the new technologies are powerful, dramatic, and loaded with command possibilities and risks.

The second part concerns counters to those technologies. It is intended to demonstrate that command and control systems are assets to be commanded, reconfigured, and moved around, just like weapon platforms. C^2 systems fight each other for a supremacy just as real and critical as a battle between ships and planes.

The third part is perhaps the most important. It focuses on the commander and his needs as a decision maker. The final section gives a few suggestions on possible implications of the new technologies to naval strategy. My objective is to leave the reader with the impression that, "I'd better look into this one. If I do, I could win. If I don't, I could lose."

The New Technologies Of Command

The first and most obvious is space communications. Reliable, high-quality communications are now available to fixed and mobile users anywhere on the globe using equipment of reasonable size, weight, and cost. Few, if any, relay stations are required. The risks of enemy direction finding are much reduced. Combined with other communications, space communications today provide the Navy with what Admiral Tom Hayward characterized as the finest crisis management command and control system in the world. His prime example was the 1981 Libyan crisis, in which Libyan fighters fired at American planes, and the latter returned the fire with deadly effect.[4] Within minutes of the action, the Commander of the Sixth Fleet and the Chief of Naval Operations in Washington knew of the incident in detail. The US Government could and did take the diplomatic initiative before the Libyan Government was aware of what had happened.

Primarily as a result of improvements in space communications, the commander at sea is no longer isolated, a development that, from the standpoint of many commanders, has both pros and cons. But a *new* problem is created: the commander and his staff are deluged with more messages than they can handle. More on that later.

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*As with any rapidly developing field, nomenclature can be a problem. C^3I is a generally accepted term and refers to all those systems that support command and control, including the commanders but excluding the command control decisions. Navy usage, as of this writing, uses command and control (C^2) to cover the same things but, to my mind, the general reader might confuse the Navy usage with "commanding and controlling" by the commander.

The technology next in importance is probably space surveillance. Until about 1978 very few people in the US Navy knew about the highly developed capabilities of both the Soviet Union and the United States.[5,6,7] The information was too highly classified for general discussion. As a consequence, its potential impact on naval command and control was obscured. But in January 1978 a Soviet reconnaissance satellite, using a nuclear power supply, reentered the atmosphere and scattered radioactive material across several hundred square miles of Canada. Had there not been a nuclear power supply on board, the story might have been different. But in the public uproar, the mission of that satellite series was revealed. That series, incidentally, had been operational for years. President Carter subsequently announced that there were other satellites that sensed and reported.[8] In the case of that Soviet satellite, the reporting could be directly to military forces, a possibility whose military consequences were much more apparent to military professionals than to the public. In my opinion, Soviet surveillance satellites were and are an integral part of the Soviet force structure and not just peace-time-only intelligence collectors.

It is not necessary to know all the details to appreciate that satellite surveillance systems pose both great opportunities and great threats to naval forces. It is not too much of an overstatement to say that future naval commanders should operate under the assumption that their forces are under continuous surveillance with results available in a timely manner to enemy combat forces. Obviously, it could be critical to the naval commander to have access to similar surveillance and, if possible, to have some way of negating that of his opponent. Gone forever for either side is the protection of being over the horizon, unless, of course, either side can blind, confuse, or deceive the other. In that case, the electronic battle suddenly becomes asymmetric.

The tactical consequences of excellent surveillance are well illustrated by the experience of Admiral Dan Murphy when he was Commander of the Sixth Fleet during a Mideast crisis. The Sixth Fleet was intermixed with a comparably sized Soviet fleet in a period of high tension. Washington, as usual, was concerned. Some retired Navy admirals were advocating taking the Sixth Fleet out of the Mediterranean altogether. Murphy, on the spot, was comparatively calm. He knew that the Soviet ships were not deployed in attack positions. Almost the opposite was true, as a matter of fact. And he knew that if they changed, he would know about it in sufficient time.

Undoubtedly, the Soviet deployment was deliberate. The global positioning of forces these days is often used as a "signal" to the other side about the seriousness with which a situation is viewed. It has reached the point that each side assumes that the other side, through surveillance and analysis, gets the message—an assumption that carries some risk.

Incidentally, to quantify what for Murphy was "sufficient time," a rule of thumb in his tactical situation is that 15 minutes or so would make all the difference. That is, if he had to fight, the outcome would be determined in 15 minutes: the rest would be mop-up. That the critical period is so short is no doubt the result of a combination of wide area surveillance, long-range weapons of high destructiveness per weapon, and the relatively close quarters of the Mediterranean. In the Atlantic or the Pacific the times might be somewhat longer, but they would not extend to hours or days.

Third in a list of new technologies is space weather and space navigation. These assets provide global support and wide area coverage, and they require no emissions from the fleet. Their value for fleet operations is being demonstrated in one naval exercise after another. Perhaps the greatest potential value is in air operations during full emission control (EmCon), during poor weather, and for standoff attack against localized targets. Needless to say, flight vectoring back to the carrier with an accuracy of better than one deck length is extremely useful. These assets, because they require no fleet emissions, thus help defend the fleet against enemy space surveillance—an example of one space system defending the fleet against another.

Fourth in my short list is computerized data bases and the artificial intelligence necessary to use them. Enormons quantities of information can now be inserted, organized, stored, and accessed in very short periods of time. Logisticians were perhaps the first to recognize this capability for cost saving. Using computerized data bases, logisticians could distribute inventories much more efficiently and, in the process, considerably reduce the total inventory.

The Defense Mapping Agency's multiparameter maps are another powerful application. Computers can now make maps showing the locations of all kinds of things, from terrain avoidance profiles to the electronic order of battle.

An early Navy example, and one of the most important developments of the last 30 years, is the Naval Tactical Data System (NTDS), which puts symbols of planes and ships on a map-like display.

In an interesting experiment, a carrier skipper computerized the rules of engagement in a naval exercise, calling out what could or could not be done depending on what the red, blue, and orange forces did. The results were marginal—the computer response time of about a minute was too slow; it had to be seconds! Three problems continue to arise: (1) "garbage in—garbage out"; (2) how to organize the data base so that it is reasonably responsive to nonstandard queries; and (3) how to avoid saturating the commander with more information than he wanted to know about the subject. As one admiral put it, "It used to be tough to find out the location of an aircraft. Now I get not only that but also the aircraft oil pressure, fuel remaining, and other aircraft in the vicinity!"

Of these three problems, the most important in my mind is the problem of operating under saturated conditions, beginning with communications. I

have yet to see a crisis in which all possible communication lines were not tied up for long periods. The priority scheme we now use is primitive. When in difficulty, every user pushes the highest priority button that user controls. The buttons are all too often assigned on the basis of rank, not urgency.

Yet there are techniques, although they have not been evaluated or even studied analytically, that might relieve that situation. They include: mandated limits on message length; computer monitor of message content for key sentences that raise or certify priority, such as *Stop the War*, or *Get the Hell Out of There*; controlled delays for access, such as are used to control freeway traffic, feedback to message senders so they know if and when a message is either transmitted on a link to a user capable of real-time reception or received by such a user; and changes in the modulation systems for increased base band to transmission bandwidth under some circumstances (the signal-to-noise ratio will deteriorate, but that may be acceptable). And, of course, there are procedural possibilities—fewer redundant messages.

The problems of saturation, of preemption of circuits by other authorities, and of general uncertainty of the on-demand availability of communications are some of the major problems limiting the acceptance of shared communication systems by military users. Users, understandably, demand "dedicated" circuits that they can "control," even when it can be shown that such circuits are more vulnerable, less reliable, slower, and more expensive than shared ones. The true need, technically, is for good on-demand communications, yet this need is usually expressed as a demand for circuit control.

With modern communications, the problem of saturation extends beyond the communication circuits. It extends into the control centers where the staffs are inundated with data from sophisticated sensors, consolidated reports from fusion centers, advice and recommendations from subordinate commands, and queries and orders from above—sometimes from *way* above.

Yet it makes little sense to turn off the flow, even if the commander could. Buried in that mass of data is critical information that takes human understanding to find and use. This leads to the problem that there simply are human limits in assimilating and judging information.

Decision aids that store, retrieve, process, and display information are of some help, NTDS again being a good example. But what is now needed is a means to supplement the human ability to reason, to focus attention on what is important, and to manipulate ideas. The technology for this comes from the rapidly developing field of knowledge-based systems, or artificial intelligence.[9] This field has now reached the point of conceptual designs, block diagrams, and reasonably understandable jargon like "situation assessments" and "nondeterministic rule selection."

At the risk of oversimplifying, the essence of artificial intelligence is for computers to process ideas and not just numbers. By ideas are meant

principles, relationships, rules, and logic sequences. The goal is to have a computer act like a cost-effective human consultant, one equipped with an enormous, accurate fund of knowledge and a carefully reasoned way of using it.[10] For that to happen, the computer must make value judgments. It must decide what is important and what is not—just like a human—in order to respond in a timely manner. Like a good consultant, the computer can display its reasoning, but that takes more time. The computer must have a good knowledge base, a good understanding of the situation, a good set of rules, and an effective way of presenting conclusions.

In the vernacular, we want the computer conclusions to make sense. Some researchers call this common sense. I prefer a better-defined term, *contextual sense*, as a statement of the goal of being "sensible" in a defined operational context. Obviously, the computer consultant must be a good match with the commander, just like a human consultant. It must be trusted, reliable, informed, right most of the time, and responsive to the strengths, weaknesses, and reactions of the individual commander.

Two ongoing developments in artificial intelligence for command and control systems will serve as examples. One, at TRW, is for space defense indication and warning.[11] In effect, the computer addresses a surveillance situation by saying, "If the following sensor information is true, and if the following quantitative conditions are met within the stated confidence limits, then by our rules of logic, the conclusions are . . . . " The computer internally decides what is relevant and is prepared to say why.

Another development, at Operating Systems, Inc., approaches an intelligence analysis situation by having information seek the user instead of vice versa.[12] It is an interesting concept, not unlike the human equivalent of advertisers seeking customers instead of customers seeking suppliers. In effect, this approach postulates that it may be easier to describe to the computer the relatively constant interests of the customers than to describe the parameters of the constantly changing information coming into the data base.

Fifth on my list is not a technology, strictly speaking, but a way of thinking. Neither is it really new, but it is as powerful for C^2 as the other new technologies. I call it "architecture."

Architecture is defined as the art and science of planning and building structures or systems. In practice, this means putting things together so that the whole is greater than the sum of the parts, i.e., that things "fit." It is an ancient art. I was introduced to it by my father, a naval architect and engineer who designed and built ships for the Navy. As an architect and engineer my specialty has been space systems. Architectural thinking is much the same whether the system is a ship, an aircraft, a submarine, or a C^2 system.

There are two reasons why architectural thinking is important, whether for ships or C^2: to ensure more reliable and efficient performance, and to help

ensure survivability under attack. Consider the performance advantage first. On the one hand, if individual elements do not work or fit each other, the whole will not work at all. On the other hand, making everything work perfectly costs too much.

For example, one way to improve reliability is through redundancy, but simple duplication of everything is too expensive. Communications engineers learned this years ago and came up with efficient network configurations that provided alternate routes between any two points to be used whenever the regular route was inoperative. Because simultaneous outages of more than a few links were rare, the networks as a whole were very robust but cost no more than the less reliable, specialized, single-route system architectures. The prime example of a highly efficient, very robust network is the Bell Telephone System.

In the space business, there is an architectural principle that calls for dissimilar redundancy. There must be two ways, preferably different, of accomplishing any function. If the primary way is onboard guidance, the alternate is ground tracking and command. Naval architects have a similar specification, one that calls for all ships' spaces to have two accesses, not necessarily alike.

Applying architectural thinking to naval aviation means viewing the battle group as a single integrated weapon system, as a distributed offense/defense tied together by an information network. That thinking, incidentally, affirmed the critical role of the large carriers as the offensive punch of the battle group. It also clarified the role of air-capable ships in company.[13]

Applying architectural thinking to command and control leads to concentrating on connectivity rather than capacity, on interoperability rather than commonality, and on access control as the key to diminished saturation. There has been a major accomplishment in this area recently. A Navy Command and Control System architecture has been drawn up by OP-094 that displays the Navy operational command structure and the connectivities among levels of command required for coordination, exchange of information, and command direction. Top-level C^2 requirements have been laid out. This architecture provides the structure and guidance necessary to exploit the high technologies available to command. Equally important, the architecture provides a framework for discussion and decision on investments to be made by the Navy, the Department of Defense, the White House, and the Congress. This accomplishment is particularly important for command and control systems that in the past have been, or appeared to be, fragmented and unrelated developments.

In brief, the architectural approach is to look at the overall picture and derive from it fundamental design and operational requirements. Prior approaches had focused on individual systems largely in isolation from the rest.

The second reason for architectural thinking, surviving attack, brings us to the subject of counter-technologies and defending against them.

Counter-Technologies And Defending Against Them

This is an old rule: for every system there is a counter system for which there is a counter-counter system ad infinitum, or, if you depend on something, it becomes a target for your opponent. Or, as expressed by a recent Naval Studies Board report on space: space is both a threat and an opportunity—it depends on which side has how much of what.

Many of our current C^2 systems are vulnerable to electronic and physical attack. Most existing communication links can be jammed. Electronic surveillance can be thwarted and deceived. Low altitude satellites can be attacked with anti-satellites. Data bases can be fed disinformation. Electronic circuits can be disrupted by electromagnetic pulses from nuclear explosions. Fixed ground stations can be targeted.

Of course, to demand full performance of any system under all forms of attack is unrealistic. Survivability is relative. More appropriate survivability criteria would ask, "Survivability under what conditions?" "Compared to what?" and "Does the new system increase or decrease the survivability of the forces it supports?"

In any case, current vulnerabilities are transitory. The counter-counter technologies are known. Spread spectrum and frequency hopping controlled by pseudorandom codes, adaptive positioning of antenna nulls, alternate routing of communications, and low probability of intercept transmissions are effective against jamming. Maneuvering of satellites, mobility of ground stations, and the use of airborne command posts—all coupled with skillful emission control—are effective against physical attack. Concealment, cover, and deception are as useful in the electronic age as they have been for centuries.[14]

The incorporation of these survivability measures into systems is primarily a matter of investment decisions based on national policy. The policy trends tell the story. Before 1972, strategic C^2 was soft as a matter of national policy. The argument seemed to be that if the strategic nuclear deterrent worked, it was not necessary to harden the C^2, and once nuclear war started, who would care? That policy was changed in 1972 to one stating that C^2 should be as survivable as the forces supported, but few if any investments in survivability were made to support the policy. In 1978 President Carter set a policy for space systems stating, in effect, that space was potentially hostile.[15] In 1982 President Reagan set the current policy, which states that space systems *should* survive.[16] This trend in policies reflects the increasing dependency on these systems as they become more capable and more widely used. As the past Commander of the Air Force Space Division put it recently, "Dependency is a given, survivability is a must."

Thus, though current systems, designed between 1968 and 1978, are relatively vulnerable, those now being designed are increasingly survivable. We are at the point now at which future satellites and their links most probably will outsurvive most surface forces. The most vulnerable segments of C^2 will soon be those on the ground. Thus, the more functions that can be put in space, the better.

In technical terms, the trends are toward smarter and smarter satellites depending less and less on the ground elements and performing as many of the conventional ground functions as possible. Surveillance satellites will transmit target location and identification instead of raw data. Communication satellites will become switchboards in the sky instead of simple relays. Navigation satellite systems will keep their high precision with very little ground updating. Satellite radio links will have jamming margins sufficiently large that jammers will have to be large, and hence vulnerable targets, themselves.

Earlier I mentioned alternative routes as an architectural approach to reliable communication performance. The existence of alternative routes also is a powerful deterrent to enemy electronic countermeasures. After all, the best possible antijamming design is the one that convinces the enemy not to jam at all. The alternatives can be different routes, different technologies, different procedures, different channels, or combinations of these approaches. Sometimes it is not even necessary to have an alternative, only to have the enemy believe that you have one.

A classic example of leading the enemy to believe you are better than you really are is the story told by R. V. Jones of British intelligence about the Malta radar in World War II.[17] The British had a search radar installed on Malta that was crucial to the defense of Allied convoys. The Germans, under a Luftwaffe general well versed in electronic warfare, set up powerful jamming stations in Sicily that were extremely effective. Jones was asked what to do, and his response was to keep operating the radar as if the jamming were ineffective. After a few days the jamming stopped. After the war Jones met the German general who was still frustrated by what he perceived as the lack of success of his jammer. Jones told him that the jammer had been effective. "But," the general said in some irritation, "you kept on operating! We must have failed. So we stopped." "Just as we hoped," said Jones—or words to that effect.

There are more sophisticated methods of deception, of course. Many of them are quite fragile to compromise and for that reason are highly classified. By logical extension, the fact that one is *not* practicing cover and deception is also highly classified. Also, in the higher order of systems, for every system there is a countersystem, so for *macrosystems*, there must be macrovulnerabilities. And, indeed, this is true. By destroying or disrupting a macrosystem at critical points, the whole can be put out of action. This mission is usually called counter-C^3 or C^3 countermeasures (C^3CM).

For example, consider the problem of defending our ships against Soviet cruise missiles. The Soviet attack macrosystem probably consists of missiles, aircraft, command and control at the base, a radar ocean surveillance satellite, electronic surveillance systems that tell the radar satellite where to look, and communications to tie the whole together. Unless all these systems work, and work reasonably well, our ships are comparatively safe from that macrosystem. Random and uncoordinated attacks on the Soviet macrosystem might not only be fruitless, but they might also increase our danger by providing the Soviets with more information than they initially had on our forces. Conceptually what is needed is a US countermacrosystem. We are a long way from that, unfortunately. The different elements of such a US countermacrosystem are in different organizations at different places and often committed to other missions. The countermacrosystem is necessarily too dispersed to be organic. The command, or "orchestration," of all transmissions and receptions has no conductor.

But real progress is being made with Aegis, our naval aircraft and missiles, an Integrated Tactical Surveillance system (ITSS) architecture, and antisatellites being developed to go after the Soviet radar ocean reconnaissance satellite. In addition, EmCon procedures are being worked out to deny electronic surveillance. Meanwhile, on the Soviet side, the idea of countering our C^2 is well developed. The Soviet Army, for example, under what is called a radio electronic combat doctrine, has numerous countermeasure equipments targeted against our Army and Air Force C^2 systems.[18]

We should expect similar C^3CM against our naval C^2. We should expect operational surprises and sophisticated procedures to be used against us. Disinformation has been and will continue to be injected into our links and data bases. We will be induced to make the terrible error of believing our codes are perfect or that our electronic countermeasures are (or are not) effective.

Does counter-C^3 work? Ask the Syrians what the Israelis did to them in the Lebanese War. Ask the Czechs what the Soviet bloc countries did to them in the 1968 invasion. In each case, C^3CM was meticulously planned and executed to the virtual paralysis of the opponent. The shock effect was overwhelming, and it was all over in a matter of hours. A good question is whether a counter-C^3 tactic can work more than once. The next time has to be different. A different plan. A different execution. And perhaps a different opponent.

At this point you, the reader, should be able to visualize a formidable array of C^2 and counter-C^2 systems, both ours and theirs, capable of doing great good or great damage. Wherever you are, in the air, at sea, or under it, these systems watch you, listen to you, transmit to you, direct weapons for or against you, disrupt your command or your enemy's, and affect everything you believe or do. These systems are powerful pieces on your chess board,

capable of acting at great distances across that board, yet vulnerable to similar opposing pieces. They need to be played with skill, with a full knowledge of their strengths and weaknesses, and with an overall strategy in mind.

And now for the third part of this essay—the commander, the center and keystone of command and control.

The Commander

The first lesson learned by a C^2 architect is that command and control is an intensely personal thing. I have known and talked at length with a number of highly successful admirals about command and control. I give you their names so that you can appreciate the strengths of their ideas and personalities—Moorer, Zumwalt, Holloway, Tom Hayward, Murphy, Gayler, Fox Turner, Stan Turner, Harlfinger, and Kidd. No two of them said the same thing or have the same style of effective command. The same applies to the generals and business leaders I have known. And, I repeat, all were highly successful.

Admiral Moorer, emphasizing the highly personal nature of command, specifically included Presidential ideas on command and control. During a discussion in 1972 of the required design characteristics of the World-Wide Military Command and Control System (WWMCCS) and the need to make it responsive and flexible, Moorer said, "I've served five presidents, and the next President will want to exercise command *still* differently." That statement became a design guideline for WWMCCS.

This personal aspect of C^2 has a reverse twist in the design of C^2 systems—one commander's bare essentials are another's gold plating. That means that we C^2 systems architects have two choices—standardize all commanders or design C^2 systems to accommodate considerable variation in style and need. I recommend the second approach.

Not the least of the problems facing an architect attempting to improve any military system is to find the serious deficiencies in the current systems. Military people close to the combat line—and those are the ones who are probably closest to reality—must believe that they can prevail in combat. If they did not, they could not be effective commanding a fighting force. Consequently, their first reaction to a query of whether things are OK is that they will be OK, that they can do the job they were asked to do, that any deficiencies are manageable.

This perspective exists even when the deficiencies are glaring. I remember asking some aviators why they put up with an airborne radar whose mean time between failures was less than a typical mission flight. Their answer: "It's the best we've had, and, anyway, that particular radar controls an air-to-air missile that only works ten percent of the time." Frustrating. The situation in C^2 is, if anything, worse. The military forces put up with

appalling conditions in HF communications, in ad hoc command centers, in nonsecure voice communications and the like because, "We haven't had anything better and we've been OK so far."

The difficulty of designing a naval communications architecture is compounded by the Navy's own traditions of command, an important element of which is the meaning of "special trust and confidence." Every naval officer's commission includes those words, and they have come to mean to him that he is trusted to carry out missions with the minimum possible instruction, i.e., the *less* communications from above the better. The tradition is reinforced by the almost absolute authority vested in ships' captains at sea, an authority originally granted in a time of communication delays of days to months.

"Commanders differ with technologists on a major issue—vulnerability and its risks. Technologists worry about vulnerabilities and try to design them out . . . . Commanders see vulnerabilities as problems in risk taking, not as absolutes."

Commanders at every level, however, insist on knowing what is going on within their commands, i.e., the *more* communications to and from below, the better. Whatever the answer to these conflicting ideas on communications—the less the better or the more the better—it is the latter that is happening in practice. The reason, I believe, is the increasingly precise way in which the Navy is being used as a responsive instrument of national policy.

One would think that there would be agreement on the need for widespread, tactical, secure voice. And yet, up to a few years ago, acquiring such secure voice capability was given low priority. The argument was that voice was used in fast-changing situations and that even if the enemy were listening in, he could not do anything damaging in time. Vietnam showed the fallacies in that argument, but it is still heard, particularly among aviators.

One of the more complicated arguments concerns the use of voice versus messages for command and control. Voice is fast, usually means instant acknowledgment, conveys emotion and nuances in meaning, and is excellent for colorful discussions of what the hell's going on in this damn crisis. By contrast, though they document who said what to whom and when, messages are slow (hours) and are unacknowledged in most Navy transmissions. Messages are preferred by Allied military officers whose ability to read English may be excellent but whose ability to understand accented imperfect English over a poor HF link is minimal. I sympathize with them!

Messages are also preferred, if not mandated, for operational orders. There is, however, a potentially hazardous period—the hiatus between the end of voice discussion and the receipt of written orders. More than a few operations have been jeopardized while awaiting written orders confirming conversations.

Another difficult subject for decision makers is decision theory, with its connotations of automated decision making according to someone else's logic. Certain decisions may be almost automatic, given a set of conditions, but don't tell that to a US President, an admiral, or a chief executive officer. A difficulty inherent in decision theory is that real-world decisions all too often are made under conditions never before considered, much less characterized and quantified. For example, how does the "rational man" theory of decision making apply to irrational events in the Middle East?

Another inherent difficulty in using computers in decision making is that, in a sense, computers are too perfect, too precise. For better or worse, whether computers are operating on simple data or complex algorithms, they will always produce precisely the same answers from the same inputs. If the inputs are incomplete or if unprogrammed events occur, the computers crash. If the context changes, what was the right answer before may be wrong—precisely wrong—in the new context. The computer consultant's results may not "make sense." Human beings confronted with making a decision clearly do not function that way. Rather, they try to be mostly right most of the time. We would rate a commander who was right three quarters of the time as pretty good and one who was right 90 percent of the time as brilliant. But one who demands complete information before making a decision would be judged incompetent. Survival, much less winning, requires prompt but imperfect decisions—they only have to be better than those of the opposition. So far, we don't know how to build computer systems that can operate that way. Research scientists are barely beginning to understand how the human mind operates so well in this mode—the formal term is "heuristically"—and it may be decades before a body of theory is developed that permits computers to emulate it.

So it seems that, no, decision making cannot be automated—but it can be aided. The Navy is making significant progress in this regard. It is comparing and correlating intelligence data to produce a more consolidated product. It is experimenting with computer aids keeping within complex rules of engagement. It is speeding up access to information and making the entry of information into data banks easier. However, such aids understandably make strong commanders nervous, particularly if they do not understand what has been done to the raw information before they see the consolidated result. Several improvements can alleviate their concern. First, any new system must produce more credible and faster results for them than they get now. Second, military officers need to be better informed of the strengths and weaknesses of C^2 systems, just as they are for aircraft, submarines, weapon systems, and the like.

Today's commanders face a rapidly changing C^2 world. In most respects it is a better one than that faced by the admirals I mentioned earlier. To the

extent that there has been a shift in consensus with time, I would expect today's commanders to emphasize these concerns:

- "We need provable answers and information, not an avalanche of data.
- "We want credible, timely, secure, and survivable communications and surveillance.
- "The new technologies are too damned expensive." (A familiar old reaction.)

There are, as always, commanders eager and willing to work with the technologists on new things. They see space systems making possible worldwide, near-real-time coverage of military operations. They have tried out the Global Positioning System (space-based navigation) in Pacific exercises to good effect. They have tried out surveillance fusion centers for support of air, surface, and undersea forces with good results and have learned important lessons. There is growing consensus that the new technologies are essential to winning the outer air battle. There is speculation that space and submarines are natural allies. A new warfare area, counter-ASW, nonexistent in any war to date, would combine the complementary capabilities of space and submarines.

Truly massive exercises have been held in the Pacific, testing and stressing command and control. In 1983 three carrier battle groups were deployed over an ocean region approximately 500 nautical miles in diameter. The fleet was supported by land-based aircraft, submarine forces in direct support of the battle group, and a remarkable array of new command and control systems from underwater to space. It was the largest coordinated exercise and most powerful battle fleet since World War II. All the events were real or near-real time and involved a high degree of innovation. The degree of C^2 asset exercise and dependency was unprecedented, and the exercise was regarded as very successful.

Nonetheless, commanders differ with technologists on a major issue—vulnerability and its risks. Technologists worry about vulnerabilities and try to design them out. Commanders see vulnerabilities as problems in risk taking, not as absolutes. In other words, a commander treats vulnerabilities as things to weigh on the scale of known benefits and possible risks. The vulnerabilities may then be acceptable or prohibitive, depending on the circumstances.

A good example is the story of air-dropped sensors in Vietnam. A group of high-level technologists, including a past science adviser to the President, conceived in the late 1960s the idea of placing sensors all along the border between North and South Vietnam. The sensors were to be variations on sonobuoys, radioing what they heard to commanders who could then direct fire to the vicinity. The question then arose, what would be the response of

the enemy as soon as he found out what the sensors were doing? Would he jam them? Would he systematically home in on their radio signals and destroy the sensors or, worse yet, spoof the sensors? To design and build jam-proof, spoof-proof, tamper-proof sensors would be an expensive time-consuming process. The longer it took to put the system into operation, the greater the chances of the enemy finding out what was intended.

After consultations with high-level commanders, it was decided to deploy as quickly as possible and to take the risk that there would be jamming, spoofing, and destruction of the sensors. As it turned out, the enemy did none of these things, ignoring them or at least not informing their troops. In one reported case, some North Vietnamese soldiers picked up an acoustic sensor, put it in a truck, and took it all the way to Hanoi, the sensor radiating the whole time and broadcasting the events of the trip!

There was for years acrimonious debate among the technologists over whether the North Vietnamese learned of the sensor concept well in advance of deployment. History shows that the North Vietnamese moved across the border in force before the sensors could be deployed. Was that the countermove, or was it a coincidence? Were the troops deliberately kept in ignorance of a psychologically potent danger to them? We may never know. But we do know that the response to our action was not what we would have taken. Subsequently, the sensors were used extensively and well, though in a different way. They provided intelligence information rather than direct targeting information, which, when fused with other information and with military tactics, played a critical role in the US marines' defense of Khe Sanh. The achieved gains, in other words, outweighed the postulated risks.

By contrast, there are commanders who reject the use of secure communications channels—too hard to use or take too long to set up—and talk in the clear, consciously taking what can be great risks for not much gain in the modern world of sophisticated interception techniques. Today's technologies make the targeting of preferred frequencies, preferred channels, known addresses, known telephone numbers, key words, and even certain voices comparatively simple. The commander who thinks that enemy headquarters will not have time to respond to intercepted conversations has not faced modern battle management C^2 systems.

Response from Moscow, or Washington, brings us to one of the most contentious subjects among commanders—command afloat or from the beach. In an era in which all assets were organic to the fleet, command afloat, particularly of the battle, was logical. As early as World War II the picture began to change, as other assets, generally located ashore, came into play. The use of intercepted and decoded messages to direct our Pacific submarine fleet against Japanese shipping is now a well-known story. Today, with over-the-horizon weapons, long-range ASW and space surveillance, a battle group is at a serious disadvantage without outside assistance. It is not

uncommon for a station ashore to know more about the battle situation than the commander afloat. Hence the unavoidable question, "Should the shore station be in command?" It would be presumptuous for me, as a technologist, to answer that question, but let me suggest that the answer may lie in some form of distributed command. If so, there is a close cousin, technically, in the field of distributed information systems. Unhappily, that field is plagued with the same problems. What computer is in charge? How do you know? Which computer has what information? Which computer should preempt, and when, and why?

As if the question of command afloat or ashore is not difficult enough, let me extend the command question one step further. Who commands information flow? In other words, who decides who gets what? Two things are apparent:

- Information is going to be so important in future conflicts that it may well determine their outcomes.
- If so, command of information flow becomes a critical command function.

But who is the information flow commander? Should there *be* a C^2 systems commander comparable to commanders of platforms? This question, these days, is not trivial. There is more information available than can be absorbed by a battle commander; someone must filter and condense it. To do that, decisions have to be made as to what is important and what is not. Who decides, how, when, and why? The current solution seems to be a "deputy commander," probably ashore, judging from the operations I have seen of the Sixth and Seventh Fleets. In any case, without answers to the questions of command of information flow, a C^2 architecture will satisfy no one.

These questions of command are not easy to answer. They imply changes in the command structure itself. But organizational changes due to new technologies occur all the time.

For example, consider the question now being addressed by Captain Fogarty of the USS *New Jersey*, a battleship now equipped with long-range antiship missiles in addition to its 16-inch guns. The question is, which is the main battery, the missiles or the guns? The gunnery officers among you will know that is not a simple question. The answer will significantly affect the power structure aboard that ship. A more complicated question is, should the *New Jersey*, which is as fast and as survivable as they come, be the command and control ship of the battle or action group? (Currently, she is not.)

In this discussion of the commander, I have posed more questions than I have answered. If my assessment of naval commanders is correct, you will not agree among yourselves on the answers. There is also likely to be a strong minority view, which, under the right circumstances, could be right. As

Admiral Moorer indicated, the right answer may even depend on who is President!

The architects of command and control systems are therefore confronted with both technological opportunities and controversial perceptions of what is needed. Whatever is designed and built will take years to implement, by which time the original advocates of the selected approach will have left the scene. To some extent, this has led to redirection or paralysis of programs. Proponents of top-down architecture and proponents of fleet-generated requirements have each held the field for a while before giving way to the other. I doubt that this will change, even with the new emphasis on survivable command and control.[19]

On Strategy

The resurgence of strategic thinking in the Navy challenges a writer to offer at least a few thoughts on the possible impact of his specialty on naval strategy.[20] In my mind, two factors stand out: the increase in combat radius and the emergence of new dimensions of warfare.

It was not very long ago that combat radius was measured in tens of miles, with each combatant performing most of the combat functions of surveillance, fire control, weapon launching, and battle damage assessment. The combat radius is now thousands of miles, with dispersal of the functions to different, widely separated platforms. This change, at the very least, raises questions about such long-held concepts as command afloat, independent action, organic assets, and withdrawal to comparative sanctuaries. The extended combat radius inherently calls for very-large-scale, coordinated, real-time command and control. Clearly, combat is now more complex—yet some of the past constraints and limitations have been opened up. Forward combatants need not be limited by the ammunition they can carry; they can call up long-range weapons and guide them to their targets. Submarines no longer need be limited by the range of their own sensors. Fleet commanders can command more assets than those organic to their fleet.

The extended combat radius does raise difficult questions of roles and missions. Fleet commanders necessarily will be concerned with events hundreds of miles inland that critically and immediately threaten the fleet, a situation already confronting the commander of the Sixth Fleet in the Mediterranean. In effect, the oceans of the world have become seas, the seas have become lakes and even narrow waterways. The Red Sea, with its narrow channel, is even narrower than it looks on the map, and the Caribbean is not as far from the Soviet Union as some might think. The Navy thus finds itself both confined and dispersed by the extended combat radius.

Mahan wrote 94 years ago, "Commerce-destroying by independent cruisers depends upon wide dissemination of force. Commerce-destroying through control of a strategic center by a great fleet depends upon

concentration of force. Regarded as a primary, not as a secondary operation, the former is condemned, the latter justified, by the experience of centuries."[21] Mahan advocated concentration rather than dispersal of force, a line of strategic thinking followed by the navies of the world for almost a century.

What might Mahan say today? I believe he would be one of the first to recognize that the new technologies of command make possible coordinated operations over vast distances. He would recognize that his concentration of force now means coordination and integration of force, not necessarily close proximity, especially in the age of nuclear weapons. He would, as before, discount small, isolated independent forces as a foundation of a strategy. He would, I would hope, recognize as in the tradition of his great fleet the 1982 Frosch Report on Naval Aviation[13] and the concept of a battle group tied together by an integrated information network.

On the other hand, and here I tread as carefully as I can, he would probably discount, at least as primary, the concept of independent submarine actions isolated from global sensors and disconnected from timely command and control. He would have endorsed Doenitz' close coordination of his submarine fleet and condemned sending the *Bismarck* out as an independent cruiser against a coordinated air and sea force.

Mahan's study of history through 1783 could not, of course, include submarines or aircraft, much less modern command and control technologies. He was looking for underlying principles, not projecting future forms of combat. His purpose was to bring into the foreground a dimension of warfare—seapower—that land-oriented historians had slighted.

In that tradition, let us look at the second impact of the new technologies of command on naval strategy, the emergence of new dimensions of warfare.

Most of this discussion has been devoted to one new dimension in particular, the information war. It is a war between sensors and signature control, between codes and cryptanalysis, between military security and intelligence. Unfortunately for strategic thinkers and historians, the information war, with its closely held intelligence secrets, is largely hidden from view. The result, all too often, is that conclusions about strategy are reached that can be far from reality. Ronald Lewin, in *Ultra Goes to War*, the most objective evaluation of the operational consequences of code cracking I have ever read, shows dramatically how history must be rewritten when the actualities of the information war are made public. J. A. Carr shows how an even earlier battle, the battle of Virginia Capes and the subsequent surrender of Yorktown, was won by the French and Americans more by superior command and control than by firepower.[22]

As with seapower in the late 1800s, command and control is today treated by many strategists as incidental, uncontrolled, and even uncontrollable. Communications is mentioned when it fails. Intelligence appears as a matter

of sheer cloak-and-dagger luck instead of as an often deadly battle over information.

Military exercises treat information flow in much the same way historians do. Information is treated as if it were perfect, as if no disinformation were in the command and control system, and as if time lates did not exist. When communications breakdowns occur, they are ignored—the scenario is played out according to a script. In the days when intelligence and communications were unreliable or at least erratic, this treatment of information might have been understandable. Today's information flow is drastically different—voluminous, checkable, controllable, and vulnerable. The Soviet Services know this and, being a part of a society whose government makes pervasive use of information control, they have readily developed a military doctrine for it. For the Soviets, information is a weapon. Distortion and destruction of information available to the enemy is as valuable as destruction of firepower. Clearly it is time for us to include the information war as an element of our own strategy and to develop modern doctrines for its use.

As for the future, we have all heard of star wars and the science fiction visualization of them as combat between battle stations in the ocean of space. Well, perhaps. For the present, the most immediate and probable impact on naval operations will be the effects on the information war. Put another way, the objectives of star wars in the immediate future will be the protection and denial of information generated and relayed by satellite systems. Much of star wars will be electronic combat. Heavy weapons operating in and from space will come much later. Nonetheless, it is not too soon for Navy strategists to be thinking about the impact of space war on naval operations.

For years the Navy has described itself as a three-dimensional Navy, one that fights under, on, and above the sea. It may be time to add more dimensions. Space systems certainly have arrived as elements of combat. Modern command and control systems are engaged in a combat every bit as real as that between submarines, ships, and aircraft and with comparable impact on the outcome of the overall battle. Perhaps we should talk about a four, a five, or a multidimensional Navy, lest these new dimensions be slighted the way nineteenth-century historians slighted seapower. All these dimensions are essential to the Navy, regardless of how furnished or managed. Take away one and naval strategy is in trouble. Add to any one and naval strategy improves. Together they make the Navy the powerful and uniquely effective instrument of national policy that it is.

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Communications dominate war; broadly considered, they are the most important single element in strategy, political or military.

A.T. Mahan

Caribbean Coast Guard: A Regional Approach

Commander Robert E. Fenton, US Coast Guard

For many Americans, pre-1980 thoughts of the Caribbean Basin* were focused exclusively on tourism in an idyllic tropical paradise. While reality never matched that naive simplification, the US action in Grenada in October 1983 capped a series of events that graphically demonstrated the strategic importance of the Caribbean. Before that involvement, revolutionary upheavals in Nicaragua and Surinam; guerrilla movements in El Salvador, Guatemala and Colombia; the massive immigrations of Cubans and Haitians in 1980; the debt crisis of the Basin, and the persistent drumbeat of Cuban adverturism and propaganda already had focused US policy-level attention to a region long regarded as secure for American interests. Cynics will argue that Grenada represents a return to gunboat diplomacy, characteristic of past US policy that has alternated between "benign neglect" and periodic, fitful unilateral interventions. More realistically, others assert that it manifests a renewed American commitment to its neighbors, backed up by military strength. That commitment is embodied in a mature Caribbean policy that has three major, continuing components:

- Support for free elections and broadly based democratic institutions, consistent with American ideology, beliefs in self-determination, and hope for evolutionary progress toward representative government.
- The Caribbean Basin Initiative (CBI), an integrated program of trade, aid and investment to overcome structural under-development in the Basin countries and so to stimulate the internal economic growth necessary to reduce socio-political pressures for radical change.
- Collective security efforts and security assistance to help democratically oriented governments resist externally supported insurgents who would impose totalitarian regimes inimical to US interests.[1]

*While not defined precisely, United States policy considers that the Basin includes Mexico, Central America, the Caribbean Islands, Venezuela, Colombia, and Guyana. The term connotes a commonality of purposes and problems that occur throughout the region, rather than a discrete geographical area.

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Given the continuing validity of these objectives, it remains the responsibility of policy-makers to fashion specific programs and institutional arrangements that will ensure their attainment.

The Concept. This essay treats one possible manifestation of the last two policy components. It supports the creation of permanent regional or, more likely, sub-regional Coast Guards to buttress maritime security and to protect the internal economic health of the Basin countries.

Responding to the common interests and common problems of the participants, such regional Coast Guards would be formed from existing Coast Guards, police forces, and/or navies acting in "dual-hatted" capacities, both as national maritime forces and as naval components in broader regional collective security arrangements. While ultimately a single monolithic "Caribbean Coast Guard" acting in a coherent multilateral fashion might be practical, a less ambitious sub-regional approach seems much more realistic. Depending on the degree of political integration and the mutual compatibility among the neighboring states, a variety of organizational forms are suggested. Those would range from simple liaison mechanisms between adjacent states—much along the lines of present coordinating arrangements for maritime Search and Rescue (SAR)—to sub-regional Confederations designed specifically for a limited set of naval/Coast Guard functions, to stronger general-purpose, multi-mission regional forces, and finally to the fully evolved multinational force in the future. As will be seen later, US-Jamaica-Barbados action in concert with the Organization of Eastern Caribbean States (OECS) was a temporary prototype of this last organizational form. This discussion will deal only with the second stage of evolutionary growth, the confederated Coast Guard. As states grow comfortable with the status quo, they could proceed to a next higher stage of integration. In any event, the US role could be tailored to match its own needs and interests, the capabilities and interests of its potential partners, and the current political climate.

At the very least, the US Coast Guard (USCG) could serve as a "role model" and a training resource for newly emergent national Coast Guards. As Table 1 indicates, there is a remarkable similarity between USCG missions and those of two important island nations, which are probably typical of most Caribbean nations. In the long run, it could function as the US member and nucleus of the region-wide "Caribbean Coast Guard," since its relative size, mission profile, and existing ties to Caribbean nations offer some benefits. Paradoxically, even though it is at all times a US armed force, its image is basically humanitarian and nonthreatening to Caribbean nations that are often highly suspicious of US military dominance. Thus, for example, Coast Guard cutters operated routinely without incident off Mariel, Cuba, during the 1980 "Freedom Flotilla," and maintained routine

TABLE 1: Comparison of Coast Guard Missions—United States, Jamaica and Trinidad/Tobago Coast Guards

United States	Jamaica[2]	Trinidad-Tobago[3]
a. Search and Rescue	a. Search and Rescue	a. Naval Defense
b. Aids to Navigation	b. Surveillance of the coast line and territorial seas.	b. Search and Rescue
c. Law enforcement (customs, drugs, fisheries, immigration, etc.)	c. Fisheries Protection	c. Narcotics drug enforcement
d. Marine environmental protection	d. Narcotics Drug Enforcement	d. Anti-Smuggling of goods and emigrants
f. Military preparedness	e. Anti-Smuggling in accordance with the Customs Laws	e. Fisheries protection
g. Marine Safety	f. Assistance to Government agencies	f. Marine environmental protection
h. Marine Science	g. Aid to civil powers	g. Disaster assistance
i. Port Safety and Security	h. Assistance in times of national disaster	h. Marine safety
j. Assistance to Government Agencies.	i. Training and exercises with other Commonwealth Forces	
	j. During National Emergencies, operates as the Naval Unit, Jamaica Defense Force.	

patrols in the Windward Passage and Yucatan channels during the Grenadian incursion. Given improved naval capability in its newest cutters (the 270-foot-long "Famous Cutters" class) and a deliberate decision to concentrate those and other Coast Guard resources (i.e., the 378′ *Hamilton*-class cutters) in the Caribbean area, the Coast Guard could take up the slack of an otherwise diminished US naval presence, particularly in an antisubmarine warfare role. The *Hamilton*-class ships will begin a FRAM program in 1985 that will extend their service lives and add new capabilities, specifically Lamps I, TacTas, secure voice/satellite communications, and a MK75 Oto-Melara gun with MK92 Fire Control System. While the Famous class now has only space and weight provisions for AN/SQR-19 TacTas sonar, Harpoon, Lamps and Phalanx, there are some indications that these systems may be installed relatively early in their operational lives.[4] Without those systems, the cutters could serve as effective Command and Control platforms, but would lack essential offensive/defensive capability to function in a multithreat environment. With them, collectively, the Coast Guard can truly serve as the low-mix US naval option for the Caribbean postulated in a recent *Review* article by Capt. John Trainor.[5] Of course, this concentration of US resources could be done only at the expense of domestic missions throughout the continental United States, Alaska and Hawaii.

Thus, the concept of a "Caribbean Coast Guard" is fairly fluid. Its exact nature, shape and functioning will vary in time and by sub-region. Its development will be evolutionary and its mix of roles and missions a product of political agreement. Nonetheless, its one constant is a progressive integration of naval/Coast Guard forces in a cooperative regional framework. Through that mechanism, enhanced collective security and internal economic benefits will accrue.

Factors Arguing For and Against a Coordinated Approach. US policy toward the Caribbean is not motivated by altruism, but rather by the hard realities of its strategic importance and of its growing interdependence. The Basin forms our "third border," with its Sea Lines of Communications (SLOCs) carrying half of US foreign trade, over two-thirds of our imported oil, and a wealth of strategic minerals. In the event of a Nato war in Europe, 50 percent of US force supplies would transit through the Straits of Florida.[6] Economic interdependencies are strong and the Basin collectively is our third largest trading partner, providing a net favorable balance of $1 billion on a $60 billion two-way annual flow. US imports ($30 billion) include oil, sugar, coffee, bauxite and meat, while exports ($31 billion) are concentrated in manufactured goods, machinery, chemicals, grain and transportation equipment. US direct investment aggregates to $13 billion, and US and Western banks collectively carry nearly all the area's debt obligations.[7] People are equally important, as the Basin is the source of 80-90 percent of all annual US immigrants (legal and illegal), with the US mainland now home to nearly one out of every eight persons born on the Caribbean Islands.[8]

Thus, the strategic importance of the Caribbean is well established for both the United States and the other Basin states, which themselves are even more dependent on SLOC protection (95 percent of their trade moves through the Caribbean Sea, Gulf of Mexico and Panama Canal).[9] This mission has been foremost in the minds of US naval planners, with ASW being a principal concern, a concern shared by the two larger navies in the area—Colombia and Venezuela. Also, the added threat of a Cuban Navy being used as an ancillary to communist-supported guerrillas in their own countries has prompted parallel interest in internal antisubversion as a naval mission.[10] At the same time, protection of 200 nautical mile Exclusive Economic Zones (EEZ) will bring all naval forces further offshore for an enforcement presence.

As Trainor and Robert Scheina both suggest, the Cuban-Nicaraguan naval threats are not sufficiently grave to warrant a continuing and overt US Navy response, but naval forces nonetheless would have to be diverted from other tasks to deal with these challenges. The indigenous military forces are not large enough for the task. Collectively, the Basin countries have the world's smallest military establishments relative to their size. Cuba is the exception; with a population less than one-eighth as large, it has more armed forces members (227,000) than all of the rest of the Basin countries (less Mexico) *combined* (216,900).[11] Today, the US Navy is severely stretched to meet its forward deployment strategy commitments. This situation holds little promise for improvement as the effects of a personnel end-strength freeze through 1985, combined with the acquisition of thirty new ships, will further squeeze the support base.[12] Giving the realities of naval commitments to Nato, the Middle East, the Far East, and new demands for a Fifth Fleet in the

Indian Ocean, the US Navy will be hard pressed to divert added resources to a vulnerable Caribbean. Where once the Royal Navy and American Navy held undisputed sway, only Guatanamo Bay and Roosevelt Roads are left as US operating bases, with no permanent forces afloat. The US Coast Guard is also severely strapped and is maintaining a strong Caribbean presence for antidrug smuggling only by depleting its assets throughout the East and Gulf coasts. The small French and Dutch naval presence is insufficient to provide credible security.

Thus it becomes apparent that pure self-interest of the Caribbean states and US naval realities argue for a coordinated approach. But for a number of reasons, such a collective arrangement may be difficult to achieve. First, the intense nationalism of the Basin countries has frustrated numerous previous attempts at political alliances; in fact, recent history has witnessed the area splintering into an array of "mini-states." Just since 1975, nine new independent countries have been created from former British and Dutch colonies. Establishment of any joint or coordinated armed force-Coast Guard presupposes some level of joint foreign policy and cohesion.

Second, notwithstanding the common threat, Basin countries harbor a lingering fear of US intervention in their internal affairs. Clearly, some will see Grenada as a confirmation of this anxiety. Soviet propagandists always have played on this concern, arguing that an "inter-American Armed Force" would be used inevitably as the vehicle for advancing US imperialism and suppressing progressive elements in decadent societies.[13] Therefore, the impetus and direction for such forces will have to be primarily from the countries themselves.

Third, in conjunction with the fierce nationalism, there is a heady potpourri of cultural, social and political pluralism in the Caribbean. The "Caribbean Basin" is more a geographic entity than a political or social reality. For example, Spanish-speaking Central America lacks the same level of parliamentary democracy and stable political institutions that generally prevail in the insular Caribbean and in Mexico, Venezuela, and Colombia. The British and Dutch retain some influence in their former colonies, but not sufficient to ensure any viable move toward political-economic unity in the Caribbean Basin. Although probably overstated, the fact remains that some polarization continues to exist between the Anglo and Hispanic cultures that, by habit, does carry over into the political arena.

Fourth, the Caribbean countries differ markedly in economic power and naval strength. Except for Venezuela, Cuba, and Colombia, none has a navy of even modest size or modern equipment. Economically, most countries are small and underdeveloped. They are caught in the grip of a worldwide recession that has drastically harmed their commodity-based economy and blunted their hopes for economic growth. Lastly, traditional US political dominance is increasingly being challenged not just by Cuba, but also by

Venezuela and Mexico, which seek to influence regional events from a perspective not always congruent with US views.

Overall, nonetheless, the factors and pressures are in place for a coordinated regional approach, but for one which must account for the unique regional environment. From the foregoing factors, it is obvious that:

- National sovereignty must be preserved scrupulously in coordinated arrangements;
- Subregional groupings built around common heritage, culture, language or political institutions are perhaps most feasible;
- The US role ought to be low-key and nondirective while simultaneously warmly encouraging;
- The sub-regional makeup of the forces will have to develop a "critical mass" from relatively small national contributions; and
- The attitudes of Venezuela, Colombia, and Mexico will be critical to the success of any initiative.

Caribbean Navies/Coast Guards—Capabilities and Limitations. Whether called a navy, Coast Guard or police force, most small developing nations of the Caribbean seek a quasi-military seagoing service capable of providing limited defense operations, search and rescue services, environmental and economic resource protection, and marine aids to navigation. In the larger countries—Colombia, Cuba, and Venezuela—a separate unit has been established to carry out these coastal functions, while the navy has retained "blue water" roles and missions.

Appendix I is a compilation of the navies and Coast Guards of the Caribbean Basin, excepting a few of the small island states. In reviewing the data, one finds that most navies/Coast Guards are defensive in nature, suited only to near-shore operations in relatively nonhostile climates. While there is a wide variety of "Patrol Craft" employed, most are small, lightly armed, relatively unsophisticated, and incapable of prolonged cruising.

Mexico, Venezuela, Colombia, and the Dominican Republic have relatively large navies in terms of personnel and major ships. However, most of their ships are obsolete. In Venezuela and Colombia modernization is ongoing with new frigates being added to the inventory. Meanwhile, to the south, Brazil, Peru, Chile, and Argentina all have larger and better fleets, but none conduct routine operations in Caribbean waters.[14]

Cuba probably has the best indigenous navy in the Caribbean. While having only one major combatant (a Koni-class frigate), her two Foxtrot submarines, 11 OSAs, 14 Komars, 4 Turyas, 18 P4/P6 boats, and 16 Zhuk-class fast attack craft constitute a potent force especially in a coastal defensive role. Cuba has virtually no capability for power projection for lack of amphibious transport.

Maritime patrol aircraft are generally lacking and only Mexico, Venezuela, Cuba, Colombia, and the Dominican Republic have any Navy or Coast Guard air capability. In the latter cases, normal peacetime operation by their air forces suggests an absence of training for these naval missions. Recently, Barbados acquired four aircraft for use with the Eastern Caribbean Regional Security System.

Command and Control arrangements appear to be spotty to nonexistent. The US Seventh Coast Guard District in Miami, Florida—which acts as the Maritime SAR Coordinator for the region—does have land-line interconnects with most of the Basin countries via US diplomatic missions, and fairly good HF regional coverage from its radio stations in New Orleans and Miami. However, most of the states themselves have little in-house capability.

Mission Needs Vs. Available Assets. As suggested earlier, the Caribbean states all have a reasonable commonality of maritime mission needs: naval (SLOC protection, coastal defense, chokepoint control, etc.) and Coast Guard (SAR, law enforcement, EEZ policing, environmental protection, etc.). All have very limited resources, and yet all are aware that deferral of investment increasingly prejudices their economic well-being and the preservation of their national sovereignty. The problem they face, then, is setting mission priorities, developing long-term plans, and creating some form of alliance associations that will satisfy their individual needs.

The existing array of national assets does represent their best attempt to balance priorities. All have selected a limited coastal defense-policing capability (i.e., Coast Guard); and the more wealthy have opted for a deep ocean presence, reflecting their concern for SLOC protection and other legitimate defense needs. To the degree a problem exists, its roots are twofold: first, the lack of resources of underdeveloped and small or newly independent states and, secondly, the failure of larger states to modernize their fleets. In neither case are the available assets sufficient to meet the needs and, besides, it is not apparent whether the needs-problems of the smaller or of larger states are of greater consequence to "collective security." On the one hand, the smaller states are most vulnerable to external subversion and least capable of self-defense. On the other hand, only the larger states have sufficient strength and power to assist the United States in its goal of preserving regional stability. But on balance, reason would favor a greater effort to develop the asset needs of the smaller states for two reasons. First, their needs are more urgent and more modest, with small-scale investment likely to return a large payoff. Second, the Cuban threat is primarily ideological and revolutionary. Should the Cubans seek to project their power through their navy, it is a threat that can be easily contained by the United States and its regional allies. Havana can be more dangerous by

exporting arms and revolutions to small countries, a threat that can be countered by the development of national and sub-regional Coast Guards. In any event, no Caribbean state can go it alone and only sub-regional or regional approaches are likely to be effective.

A Prospective Sub-Regional Model. The US Coast Guard, working with the Departments of State and Defense, has worked closely with many developing countries in training and information exchange activities, particularly in the Caribbean. In October 1981, the first Caribbean Maritime Symposium was hosted in Florida by the Coast Guard. Attended by 41 representatives from 15 countries and two international organizations, the symposium focused on maritime SAR, pollution control and associated equipment. On a bilateral basis, most Caribbean countries have cooperated with the United States in numerous and effective actions to suppress illicit drug smuggling. Also, through a bilateral treaty with Haiti, a joint US-Haitian effort has curtailed widespread illegal immigration from Haiti to southern Florida.

To date there has been only one example of an effective and functioning sub-regional Coast Guard. This is the Eastern Caribbean Regional Security System (RSS), which itself is an outgrowth of the earlier Organization of Eastern Caribbean States (OECS). The OECS is a sub-regional body created in June 1981 by treaty—the members are Antigua, Dominica, Grenada, Montserrat, St. Kitts/Nevis, Saint Lucia, and Saint Vincent and the Grenadines. Principal aims of the treaty are the promotion of regional cooperation and collective security.

OECS was followed a year later by the RSS. On 29 October 1982, the governments of Antigua-Barbuda, Barbados, Dominica, St. Lucia and St. Vincent signed a Memorandum of Understanding (MOU) on mutual assistance in disasters, smuggling prevention, search and rescue, immigration control, maritime policing, fisheries, customs, pollution control, and threats to national security.[15] Flowing from that MOU were staffing and financial arrangements worked out over the intervening period. Of recent significance was the finding by OECS that the political situation in a member state (Grenada) warranted collective security action. It obtained concurrence and support from Barbados and Jamaica, and then urged the United States to participate in the support of the regional actions taken in Grenada.

It is too soon to determine whether the RSS will remain effective in the aftermath of Grenada. Nonetheless, in concept and detail, it seems very much an analogue for the sub-regional Coast Guard favored in this approach. There is a sharing of resources and experiences; institutionally, there is a political alliance buttressed by a military collective security arrangement. Success in this limited incursion, however, could ease the way toward future cooperation. Perhaps its major shortcoming is its lack of a capability to project power, a defect which may have led to its decision to seek US assistance.

The United States enthusiastically supports the RSS, and is seeking $11.5 million in military assistance funds over five years to aid its start-up needs. These funds will provide a secure command and control network, two Sikorsky S-76 helicopters, a 110-foot patrol boat with boat weapons and military training; and three 65-foot patrol boats —one each for Dominica, St. Lucia, and Antigua—already are being purchased in FY '84. The US Coast Guard will provide training assistance teams to each country to facilitate the development of their organizations.

A Recommended Approach. Collective security arrangements are not new to the Caribbean Basin-Western Hemisphere. Before Nato was established, the Inter-American Treaty of Reciprocal Assistance (Rio Pact) of 1947 established the framework for collective self-defense against external attack. The Organization of American States (OAS) was created in 1948 to carry out its purposes. Although attempts to form a permanent hemispheric armed force have failed, an Inter-American Defense Board (IADB) in Washington does coordinate national and regional defense planning.[16] Sub-regional defense groupings have also been formed, such as the 1965 El Salvador-Guatemala-Honduras-Nicaragua military bloc, but their success has been marginal.[17]

Figure 1 suggests a hypothetical and much more modest variant of this approach to form sub-regional Coast Guards. Working within the OAS framework and existing sub-regional institutions, four major sectors could be formed. Each would have one large state with a capable navy, grouped with smaller states having limited naval and Coast Guard forces. The larger state would provide an offshore presence (naval role), while the smaller states could provide coastal defense, economic resource protection and civil maritime needs (Coast Guard role). Joint training and operations wonld seek to enhance interoperability and to build confidence. In peacetime, all states could share some responsibility for EEZ policing; in this sense they would function in a supranational capacity so as to conserve limited enforcement resources. To enhance this role, the sector borders would be drawn to conform to the outer limits of EEZs as they are formalized. Naturally, this aspect would require delicate negotiation, since sovereignty in the EEZ is jealously guarded and policing has been done very rarely on a multilateral basis.

The Eastern Caribbean RSS should be examined carefully as a model. Its experience will provide valuable lessons as to technical, operational, institutional, funding and leadership issues. Sector I is nearly a functioning entity; additions of the French Departments of Guadeloupe and Martinique plus Trinidad/Tobago and Saint Martin are needed, as well as Venezuela. Here political issues are prominent—whether and how France would participate, and the precise role of Venezuela. Venezuela has a capable navy interested in protecting its SLOCs, particularly the Panama Canal and the

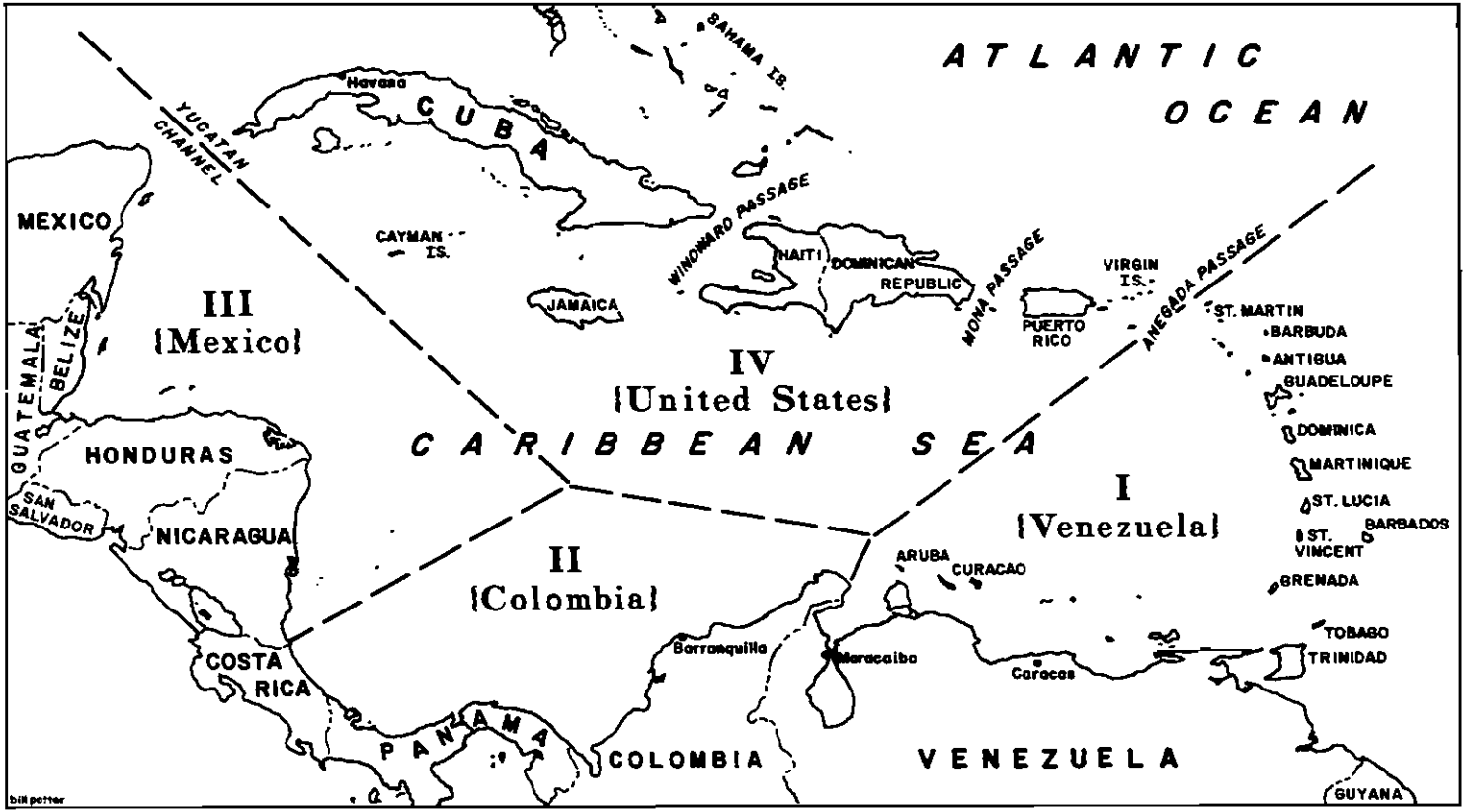

Figure 1. Possible Division of Responsibilities for Sub-Regional "Caribbean Coast Guard." Lead State in each Secror shown in braces.

Eastern Caribbean approaches. Its subsidized oil sales to regional neighbors has won friendship and strong political support. Colombia could provide a similar function westward. Mexico has perhaps the most difficult task. Although it wishes to be a regional power and has also provided concessional oil sales, it is hampered by its ambiguous relations with Cuba, the political turmoil of Central America, and the relatively poor quality of its fleet.

The US Coast Guard is suggested as the major player in sector IV, since its peacetime and prospective wartime missions (ASW, Maritime Defense Zone, etc.) concentrate its resources in the northern Caribbean chokepoints. Further, all US bases (less NavFac Antigua and Panama bases) are in Puerto Rico, Florida and Cuba. It has good working-level relations with Haiti, Bahamas, Jamaica and the Dominican Republic. The sector itself is of greatest interest to the United States because of the contiguous SLOCs and the Cuban threat.

There seems to be a number of advantages to the collective approach: It is consistent with US policy favoring collective security and the development of indigenous military forces.

It may relieve strain on forward deployed US Navy forces, permitting some relaxation of Caribbean presence for the Atlantic Fleet.

It permits enhancement of US Coast Guard wartime readiness through an emphasis on interoperability with US and Caribbean navies, and through greater US Navy and US Coast Guard regional coordination.

It enhances the roles of regional political and naval powers—Mexico, Venezuela, Colombia—in the interest of promoting regional stability, thus ensuring reasonable burden-sharing in an alliance-type framework.

It permits European/Nato partners (including Canada) to participate in hemispheric defense through coordinated military assistance to their former and existing colonies or existing departments, under the umbrella of a sub-regional organization.

It serves to strengthen sub-regional groups within the mainstream of Inter-American OAS political activity.

It maximizes the return on US military assistance funds (MAP and IMET), providing as well some equipment standardization and economies of scale in procurement.

It provides a modest foundation for later stages of enhanced collective security arrangements.

It may reduce the potential for US-Soviet confrontation by devolving regional responsibility to sub-regional organizations.

It may help the US Coast Guard's peacetime missions through the coordinated assistance provided by the new organizations.

In structuring the program, the Eastern Caribbean RSS will furnish useful guides. Nonetheless, the ideas below merit consideration.

- "High tech," expensive platforms should be resisted. Most smaller Basin countries lack the personnel and financial resources to own or operate such equipment and, in any case, their needs are much simpler.
- Concessional sales or outright grants, vice commercial sales, will be needed due to the developing countries' limited finances. While US producers should be encouraged to bid, purchase of US-made equipment should not be a qualifying requirement for aid. In particular, Nato partners should be considered—Italy, France, Germany and Britain produce numerous, reliable fast patrol boats.
- Political consensus of some type must precede formation of regional Coast Guards. The OAS and IADB could serve as a useful forum for regional agreement. Prior bilateral US discussions with Mexico, Venezuela and Colombia should help to resolve contentious issues before the implementation of each regional sector. In any case, sub-regional groups will need to develop their own evolutionary approaches.
- Caribbean states themselves are the best judges of their needs. However, some attempts to establish region-wide priorities and standards in procurement must be made at the outset. Fast patrol boats with simple missile and gun systems are relatively inexpensive, can serve dual roles as ASUW platforms and Coast Guard-type enforcement resources, and would be effective deterrents even against larger, more sophisticated ships. Helicopters and fixed-wing aircraft would be programmed for surveillance and over the horizon (OTH) targeting and SAR needs. Command and control facilities need particular care, to ensure they are compatible with regional or sub-regional decision-making processes and yet serve national needs simultaneously.

Conclusion. In terms of its geopolitical situation, the Caribbean Basin may be characterized as a diverse region with a few well established states and numerous mini-states having only recently achieved independence. In the past, their colonial status and their political and social differences reinforced their isolation from each other. Meanwhile, the United States provided an effective, if occasionally heavy-handed, defense. Today their vulnerability is more pronounced and while the United States is disinclined to intervention, notwithstanding the Grenadian incursion, their strategic location remains vital. No single Caribbean state is capable of defending the Basin, nor should any state consider it a unilateral responsibility. Rather, regional groups offer strong possibilities for coordinated security and mutual economic benefits. The "Caribbean Coast Guard" is one such path.

APPENDIX I: CARIBBEAN NAVIES/COAST GUARDS
(Adapted from *Jane's Fighting Ships*, 1981-82)

Country	Personnel	Vessels	Aircraft	Bases
Anguilla (police)		2-26 ft. rescue craft		Located at airport
Bahamas (unit of Royal Bahamas Defense Force)		1-103 ft. patrol craft (PC) 7-60 ft. PC		Nassau
Barbados (Coast Guard)	4 officers 57 enlisted	1-123 ft. PC 1-65 ft. PC 3-40 ft. PC 2-75 ft. PC		Bridgetown
Belize	50	2-40 ft. PC		Belize
Colombia (Navy)	700 officers 6500 enlisted 1500 marines	4 subs 3 destroyers 1 frigate 3 patrol ships 4 gunboats 26 support/misc.	50 helos (Air Force)	Cartagena, Buenaventur
(Coast Guard)		9 patrol craft		
Costa Rica	90 officers/ enlisted	1-105ft. PC 5-65 ft. PC 3-40 ft. PC		Liuon, Puntarenas
Cuba (Navy)	380 officers 5700 enlisted	2 subs (Foxtrot) 1 frigate (koni) 21 attack (missile) 22 attack (torpedo) 16 attack (patrol) 26 PC 36 MCM, misc.	55 helos (Air Force)	Mariel, Havana Cienfuegos Punta Ballentotes Canasi
(Frontier Guard)		14 PC		
Dominican Republic	650 officers/ enlisted	1 frigate 5 corvettes 11 PC 23 misc.	14 misc. (Air Force)	Santo Domingo, Las Calderas
El Salvador	130 officers/ enlisted	7 - PC		Acajutla, La Libertad, La Union
Grenada		1-40 ft. PC		
Guatemala	100 officers/ 500 men	3-105 ft. PC 2-65 ft. PC 10 PC 7 misc.		Santo Tomas, Sipacate
Guyana	150	1-103 ft. PC 3-40 ft. PC 6 misc.		Georgetown
Haiti (Coast Guard)	40 officers 260 enlisted	1-105 ft. PC 2-95 ft. PC 5 - misc. PC		Port Au Prince
Honduras	50	2-105 ft. PC 4-65 ft. PC 1-50 ft. launch		Puerto Cortes

Country	Personnel	Vessels	Aircraft	Bases
Jamaica (Coast Guard)	18 officers 115 enlisted	1-105 ft. PC 3-85 ft. PC		Port Royal
Mexico	16,430 officers/ enlisted 3,800 marines	2 destroyers 6 frigates 70 PC 36 misc.	10 helos 50 fixed wing	6 Gulf, 8 Pacific
Nicaragua	200 officers/ enlisted	13 PC 3 misc.		Carinto Puerto Cabezas
Panama (Coast Guard)	300	1-103 ft. PC 2-65 ft. PC 3-40 ft. PC 6 Amphib. 3 misc.		
St.. Kitts (Police)		1-30 ft. PC		Basseterre
St. Lucia (Customs)		1-140 ft. PC		
St. Vincent (Police)		1-75 ft. PC		Kingstown
Trinidad/Tobago (Coast Guard)	38 officers 400 enlisted	2-133 ft. PC 4-103 ft. PC 3-50 ft. PC 3 - Police craft		Stanbles Bay
Venezuela (Navy)	3500 officers/ enlisted 4000 marines	5 subs 2 destroyers 8 frigates 6 attack (missile) 21 PC 30 misc.	6 helos 20 fixed wing	Caracas, Puerto Cabello La Guaira
(National Guard)		43 PC		
British Virgin Islands (Police)		1-40 ft. PC		

Notes

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All was ruled by the harsh and despotic factor, shipping.

Winston Churchill

The Evolution of Soviet Thought On "Warfare In The Fourth Dimension"

Commander Floyd D. Kennedy, Jr., US Naval Reserve

A number of authors lately have expressed proper concern about the readiness of the US Navy to conduct warfare in a dimension other than the three conventional media: sea, air, and land.[1] This additional dimension, the electromagnetic spectrum, is as vital a battlefield in wartime as any of the other three, perhaps even more so. While Americans have consistently been in the forefront of the technical development of electronic warfare (EW) equipment, we have not, at the same time, been quick to exploit its operational utility across the entire spectrum of warfare. Fortunately for us, neither have the Soviets; but they are learning. Their learning process is reflected in their literature, an examination of which can generate insights into their concepts for employing EW in the future. This article will therefore trace the Soviets' perspectives on the development of naval warfare in the "fourth dimension."

In 1965, the Soviets' *Dictionary of Basic Military Terms* carried an entry for "radio warfare" (radiovoyna) that described it as a foreign concept, one not yet in the Soviet military syntax. The definition read: "Measures directed toward prohibiting or diminishing the effective use of radio-electronic facilities by the enemy, and conversely. Radio warfare includes: radio-technical reconnaissance; creation of active and passive jamming of enemy radio-electronic facilities; radio camouflage; radio misinformation; protection of organic radio-electronic facilities from enemy jamming, etc."[2] The majority of the measures contained in this Western concept were included under the Soviet principle of maskirovka, which can be loosely defined as camouflage, cover, and deception.[3]

It was not until the 1970s that the Soviets adopted a concept of electronic warfare separate and apart from their maskirovka measures. To mark its entry into their lexicon, the Soviets christened this Russified EW as radioelectronnaya bor'ba (literally, radioelectronic struggle), which they then shortened to the acronym REB. The Soviet term will be used

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throughout this article when discussing Soviet usage because, although the Soviet concept of REB and the American one of EW have considerable overlap, they are not identical.

To understand the differences between REB and EW, and thus gain insights into how the Soviets intend to employ radioelectronic means in the war at sea, one must first understand the evolution of Soviet concerns regarding the employment of electronics in naval warfare. Available issues of the Soviet equivalent to the US Naval Institute *Proceedings, Morskoy Sbornik*, provide insights into those concerns. From the time of its initial post-World War II availability in the West (1962) until July 1970, *Morskoy Sbornik* carried not one article dedicated to any form of electronic warfare. By way of contrast, during that same period, *Morskoy Sbornik* ran thirteen articles on command, control and communications (C^3), a subject of apparently great concern to the expanding Soviet Navy.

In electronic warfare the winner will be the one able to secretly develop and quickly employ the means of neutralizing the enemy's electronic means, while ensuring the stability of his own control systems.

The July 1970 *Morskoy Sbornik* article that broke the long period of Soviet literary indifference to EW as a separate element of naval warfare was a joint effort by Captain First Rank V.S. Pirumov, Engineer-Captain Third Rank A.B. Yemel'yanov and Engineer-Captain Third Rank A.P. Il'ich.[4] None published on the subject again, but this seminal piece set the stage for a variety of authors who would later examine REB in considerable detail. As is customary for the introduction of a new subject in the Soviet military literature, this article served as a tutorial, instructing the reader in both content and importance of the radioelectronic struggle at sea.

Pirumov et al. made the point very early in their article that electronics were a key element in not only the C^3 systems of all navies, a fact recognized by the more than a dozen articles on C^3 that had appeared in *Morskoy Sbornik* over the preceding eight years, but they were an integral part of naval weapons systems as well—in effect, tying all naval operations to a dependence on radioelectronic means. This dependence, according to the authors, made both C^3 and weapons more vulnerable to enemy action. The consequences of such a vulnerability could have strategic significance; for example, a delay in the receipt of a launch order by an American SSBN " . . . could have, if not a decisive effect, at least a very considerable effect on the outcome of the combat operations." Therefore, combat operations at sea were unthinkable without the active employment of measures against the electronic means of the enemy, and that requirement continued to grow.

The focus of the Pirumov article was clearly on combating control mechanisms of the enemy, whether used for forces or weapons, although the authors made it clear that control was not the only element of the radioelectronic struggle. Another key element was developing electronic systems that were superior to those of the enemy, whether they were measures designed to counter enemy systems or, more importantly, radioelectronic systems that would resist enemy actions against them. Pirumov and his colleagues quoted the foreign press in conclusion: " . . . in the radioelectronic struggle the one will win who is able to secretly develop and suddenly employ more effective means and methods of neutralizing the enemy's electronic means and at the same time ensure the stability of operation of the electronic means of his own control systems." Therefore, naval REB begins with research and development and only later becomes concerned with operational issues. But an important aspect of REB is surprise.

Not quite a year later, in the May 1971 issue of *Morskoy Sbornik*, Captain First Rank V.K. Rachkov and two coauthors examined a specific element of the radioelectronic struggle, radioprotivodeystviya, an early term for radioelectronic countermeasures or, in English usage, ECM. Rachkov et al. picked up on a main theme of Pirumov's earlier piece that electronics were central to conduct of modern naval warfare, especially in the control of forces and weapons. Radioelectronic countermeasures, as a crucial and indispensable part of REB, were designed, according to the authors, " . . . for active action against the operation of the enemy's electronic means, systems, and complexes, and for their destruction."[5] The meaning of this last passage is particularly clear in the context of the article. The 1971 Soviet view of radioelectronic countermeasures was an offensive one; they were to be used in an aggressive fashion against the enemy's means of control. Furthermore, Soviet ECM measures were not limited to the employment of electronic means. The physical destruction of enemy radioelectronic capabilities was also included in the Soviet definition of radioelectronic countermeasures.

The radioelectronic struggle at sea was not a burning issue in the pages of *Morskoy Sbornik* during the early 1970s. One 1973 article reiterated the importance of electronics to modern warfare and described how Nato navies were focusing great attention on electronic warfare, but the relative obscurity of the single author (Captain Second Rank Il'in), the brevity of the article, and its position in the back pages of *Morskoy Sbornik* tend to diminish its overall importance in the literature.[6] It did, however, at least keep the subject alive.

A concerted effort to address the radioelectronic struggle in general began in 1975. Normally, any such effort begins with the historical background of the subject under study; REB was no exception. *Voyenno-istoricheskiy Zhurnal* (Military-History Journal) ran an article, "From the History of the

Radioelectronic Struggle" in its March 1975 issue which was written by Major General of Communications Forces V. Grankin and Colonel V. Zmievskiy. The authors discussed the early applications of radioelectronic warfare in World War II and the Great Patriotic War (WW II on the Eastern Front, 1941-45), briefly touched upon the postwar period, and concluded, " . . . in the present time, radioelectronic warfare is in a new phase of its rapid development. As events have demonstrated, not one battle, not one operation of any branch of the armed forces is begun or conducted without wide application of the means and forces of radioelectronic warfare." The events to which the authors were probably referring were the successful application of electronic countermeasures by US and Israeli forces against Soviet-built equipment in the Vietnam War and 1973 Mid-East war respectively. Their message was clear: the worth of REB had been proven in combat and EW developments were moving very fast in the West; if the Soviets were not to fall behind they had best redouble their REB effort.[7]

Two specifically naval-oriented articles on the radioelectronic struggle followed in 1976, the first dealing with submarines and REB, the second with REB and naval aviation.[8] Both articles used foreign systems as examples for discussion, and each may be considered a tutorial on the peculiar aspects of the radioelectronic struggle in its subject medium. Of particular interest was the article written by Captain First Rank M. Mikhed'ko entitled "Radioelectronic Struggle and Submarines." The author contended that of all spheres of naval combat, the underwater realm was the most dependent upon radioelectronic systems and was therefore the most effective zone for radioelectronic warfare. He cited "foreign specialists" as being particularly concerned that REB means constituted " . . . a direct threat to their so carefully and so laboriously adjusted system of ASW surveillance . . . . " The underlying basis of Mikhed'ko's article appears to have been the identification of submarine warfare as the most profitable application of REB methods and means.

In his 1976 *magnum opus, Sea Power of the State*, Admiral of the Fleet Sergei Gorshkov synthesized the REB discussions of those who came before him and gave his blessing to the points that were made. He wrote, quote:

All forms of naval activity are to a greater or lesser degree, of necessity, linked to the employment of electronic equipment. The trends toward the automation of the control processes of shipboard systems, weapon complexes, and ships and forces attest to the growing role of electronics in the functioning of all control and weapons systems. That is precisely why superiority in the field of development of military electronics is becoming one of the indispensable conditions for military superiority over the enemy.

However, in improving the combat capabilities of weapons and forces, electronics at the same time makes control of systems and equipment more

vulnerable to enemy action. Now it is possible to hinder control not only by destroying the control systems themselves, but also by affecting their electronic equipment, as was convincingly demonstrated in the course of the Egyptian-Israeli wars of 1967 and 1973 and the combat operations in Vietnam.

On the whole, electronics, by penetrating deeply into all spheres of operations of the armed forces, and by occupying an important place in force and weapons control systems in all units and at all levels, is assuming the role of one of the decisive factors determining the actual relative strength of the forces and equipment of the opposing sides.

This circumstance is of special significance for the navy, in whose spheres of operations electronic equipment is being employed considerably more widely and more diversely than in any other branch of the armed forces. Today the navy has in its inventory the latest electronic equipment, which is built in shipboard (including airborne) and stationary versions. It is distinguished by its great operating range, accuracy in measuring target coordinates, high reliability, and extensive automation. All of this assures high-speed analysis of observational data, issuance of target indication data and current coordinates, and selection of optimal decisions for employing forces and weaponry.[9] Unquote.

Gorshkov did not assign priorities to the media in which the REB means were employed, as Mikhed'ko did, but instead discussed the employment of radioelectronic means in each of the media. The second edition of his book, published in 1979, repeated the same points, but replaced Gorshkov's original reference to electronic equipment being employed in the navy *more* widely than in any of the other services with the simple phrase "especially widely."[10] As the most junior of five Soviet services, the navy cannot (diplomatically) do more of anything than the more senior services, except perhaps operate ships.

In 1977, available articles dealing with REB became more technical in two instances, and returned to the historical treatment in a third case. In the April *Morskoy Sbornik*, Engineer Captain Second Rank Byakin discussed foreign radar countermeasure techniques, going into great detail and calculations on means for reducing effective scatter area, active and passive jamming, and the creation of false targets. He emphasized the importance of radar by ascribing to foreign specialists the belief that " . . . in the near term radar will remain the basic means of detecting surface and air targets at sea." The tone and context of the article support the contention that that was also Byakin's and the Soviet Navy's belief.[11]

Of the two other articles from 1977, one is notable in that it was a historical piece in *Voyenno-istoricheskiy Zhurnal* which introduced to the open press Engineering Major General A.I. Paliy, who would become the most authoritative Soviet writer on REB,[12] and the second, because it was devoted exclusively to evaluating the effects of a nuclear blast on communications.

The Paliy article discussed much the same information as the 1975 Grankin piece, but Paliy was accorded the position of the lead military article while Grankin's was buried in the back of the March 1975 issue. Since both authors held the rank of Major General and the articles' contents were remarkably similar, the only apparent rationale for the disparity in placement of the two articles is the level of importance attached to the subject matter. If this is the case, REB had increased in importance markedly in the two years between the two articles.

Written by Engineering Colonel Pertsov and published in *Technika i Vooruzheniye* (Technology and Armament), the last 1977 article explored the effects of a very high-altitude nuclear burst on a variety of communications. It was apparent from the discussion that such a burst would be set off with the intent of interfering with communications and not for any other military purpose. According to Pertsov, such a burst would least affect low-frequency, short-wave communications—he was apparently recommending the adoption of such for strategic control to the Soviet High Command.[13]

Control returned to the forefront of REB concern in two 1978 articles in *Morskoy Sbornik*. The first, by Captains First Rank Charkin and Solov'yev, discussed the most important aspects of controlling forces in a naval battle. They made three specific points: first, and above all, effective control must be retained over friendly forces; second, concurrently with retaining control must come disruption of enemy control by means of electronic countermeasures (elektronnogo protivodeystviya), firepower, *and nuclear weapons;* third, the first strikes in a battle should be against control and communications ships.[14] The authors did not specify whether nuclear weapons would be used directly against targets or as high-altitude bursts for communications disruption as discussed by Colonel Pertsov the previous year.

The second 1978 article was by Admiral V. Sysoyev, a frequent author on command and control subjects. He repeated and enlarged upon Charkin and Solov'yev's arguments, defining the main objective of REB as a whole to be leaving the enemy without control while providing stable control over friendly forces. Sysoyev went on to argue that with approximately equal combat capabilities in two opposing naval forces, the side that applied radioelectronic means to best advantage would win the battle. Since domination of the radioelectronic spectrum could not be achieved over an extended period of time, the application of countermeasures must be coordinated so that domination occurred at the most opportune moment. Targets for such countermeasures, both electronic and physical, were, according to Sysoyev, command posts (afloat, ashore, or airborne), communications systems, and situation reporting/intelligence systems.[15]

A third 1978 article published in *Morskoy Sbornik* dealt for the first time with the use of radioelectronic means in the antiship missile defense (ASMD) problem. The authors, Captain First Rank Rodionov and N. Novichkov, have

together published numerous articles on cruise missiles and ASMD, including a very important one on ASMD in the Falklands war which will be discussed below. This article almost seemed to be a rejoinder to those who were looking at REB solely in the context of anti-C^3 measures. Rodionov and Novichkov contended that REB was a vital part of ASMD, and for evidence they pointed out that Israeli ECM by itself caused fifty Arab (Soviet-made) antiship missiles (ASM) to miss their mark in the 1973 Mid-East war; not one ASM fired against Israeli ships found its target. The authors therefore were advocating radioelectronic measures for defensive as well as offensive means.[16]

In late 1979, the seventh volume of *Sovetskaya Voyennaya Entsiklopedia* (Soviet Military Encyclopedia) was published containing an entry written by Major General A.I. Paliy on the radioelectronic struggle. Inasmuch as the encyclopedia is the official publication of the Soviet military, its definitions are particularly authoritative. Paliy defined REB as " . . . a complex of measures conducted for the purposes of reconnaissance and the subsequent radioelectronic suppression of the radioelectronic means (RES) and systems of the enemy, in addition to the radioelectronic protection (REZ) of friendly RES and systems. REB measures are conducted in conjunction with the destruction of RES . . . . " According to Paliy, REB no longer included physical destruction of enemy electronics, but was now limited to radioelectronic measures alone that were conducted alongside attacks on enemy facilities. The author went on to discuss both the offensive and defensive employment of radioelectronic means and briefly expanded upon the interrelationship of the terminology. He concluded by equating the official Soviet term, "radioelectronic struggle," to the term "radioelectronic warfare," indicating that the meanings of the Soviet and Western terms were converging.[17]

Paliy followed his 1979 encyclopedia entry with a 1981 book entitled *Radioelectronic Struggle: Means and Methods of Suppression and Protection of Radioelectronic Systems* in which he devoted a special chapter to naval REB. He explained that the West conducted REB to conceal ships, bases, and aircraft from detection and to protect them from damage by guided weapons, to conduct reconnaissance, and to control forces. Current developments in the West were centered on automating measures for ASMD and for reducing physical fields of ships, in particular acoustic signatures of submarines. The author concluded his discussion by describing the sequence of events associated with, first, Nato submarines employing radioelectronic means, followed by the employment of REB by Nato surface ships. It is impossible to determine from the context whether the same procedures were employed by Soviet naval forces.[18]

Discussions on the control of naval forces preoccupied many authors in the pages of *Morskoy Sbornik* in the second half of the 1970s and into the 1980s. Gorshkov himself published an important two-part article on the subject in

the pages of the May and June 1980 issues.[19] Between 1978 and late 1982, however, no new ground was broken on the subject of the radioelectronic struggle. One article on US Navy shipboard ECM equipment appeared in April 1980, but that merely completed the trilogy of USN EW capabilities begun in the two 1976 articles on USN submarine and aircraft EW measures.[20]

The 1982 Anglo-Argentine war over the Falkland/Malvinas Islands brought a new surge of writings on REB. From November 1982 through April 1983, no fewer than five major *Morskoy Sbornik* articles addressed the importance of radioelectronic warfare in the war in the South Atlantic or in naval combat in general. The first by Engineer-Rear Admiral G. Popov was a treatise on the multitudinous benefits provided to naval operations by electronic systems, particularly in the area of intelligence/reconnaissance. Radioelectronic means, according to Popov, permitted both the identification of air and surface attackers for defensive purposes and the determination of envelopes of defensive coverage for offensive purposes. Recent events in the South Atlantic had proven the value of such capabilities.[21]

In the same November 1982 issue of *Morskoy Sbornik*, Rear Admiral I. Uskov asserted that radioelectronic means were instrumental in ensuring the combat stability (survivability) of surface ships in conflict at sea, as proven by the Falklands campaign. He offered as proof the fact that " . . . in all cases when English ship captains promptly used passive jamming, the attacks of Argentine antiship missiles were unsuccessful, as a rule."[22] This conclusion was echoed by Captain First Rank Rodionov, Captain Second Rank Nikitin and N. Novichkov in a January 1983 article that specifically examined REB in the Falklands campaign. They dismissed the sinking of *Sheffield* as the exception that proved the rule of the importance of REB to ASMD. If *Sheffield*'s electronic surveillance equipment had been operating, according to the authors, her crew would have had 55 km (30 nm) warning of the approach of the attacking Argentine Super Etendard, and 37 km (20 nm) warning of the Exocet, more than enough time to initiate defensive measures.

Rodionov et al. then made some particularly interesting observations of cause and effect relationships that applied not only to the British experience in the Falklands, but to the current Soviet Navy as well. Since the British had no airborne early warning (AEW) inherent to their naval grouping, according to the authors, they were forced to make exceptionally wide use of REB means to combat the antiship missiles of the enemy. This experience pointed up specific improvements that should be made to the existing systems—the two most important being the adoption of automatic systems that can switch rapidly from one form of ASMD (against radar homing heads) to another (against infrared or laser homing heads), and the installation of completely automated antiaircraft missiles and guns with a high rate of fire.

The authors concluded the article with their version of the Royal Navy's own recommendations based on Falklands events. They were: equipping naval groups with AWACS aircraft; creating an AEW remotely piloted vehicle or tethered aerostat to perform the AWACS mission; improving active and passive ECM systems for countering ASMs; equipping carrier groups with long-range, highly maneuverable interceptors to keep enemy aircraft at great distances from their targets (the VTOL [sic] Sea Harrier was effective only in close-in air battle); improving VTOL aircraft's capability for intercepting low-flying targets by modifying their air intercept radars and equipping them with advanced air-to-air missiles (AAMs); developing more effective long-range, surface-to-air missiles; deploying more antiaircraft gatling guns on ships; and improving ships' damage control capabilities.[23] Inasmuch as the Soviets have in their fleet systems similar to those of the Royal Navy, the above recommendations could apply equally to Soviet naval procurement policies. Particularly appropriate are the suggestions in regard to arming VTOL aircraft with AAMs; Forgers with AA-8 Aphids on wing hard points were observed for the first time on board *Minsk* in the Indian Ocean in December 1982. Unfortunately, Soviet improvements in radioelectronic means are less visible and therefore not as easily verified.

The focus on air defense of British electronic warfare in the Falklands was noted in a February 1983 *Morskoy Sbornik* article by Commander-in-Chief of the Soviet Baltic Fleet, Admiral I. Kapitanets. He contended that conventional weapons by themselves were proven by Falklands events to be ineffective against ASMs, and that ASMD was accomplishable only through careful integration of radioelectronic countermeasures and weapons. Kapitanets also remarked that the employment of radioelectronic countermeasures did nothing to discourage "old" aircraft delivery tactics which in turn had proven very effective. The author quoted Nato military specialists as concluding that early warning about the air threat is basic to successful defense against it.[24]

The last article on REB reviewed for this paper was a particularly technical one by now Engineer-Captain First Rank A. Il'in, author of the 1973 article on Nato and EW, and Captain Third Rank B. Azarov. They took the radioelectronic countermeasures discussion one step further and wrote of electronic counter countermeasures (ECCM) specifically as they applied to radar jamming. The article broke no new ground but was instead a simple review of the measures taken by Western powers to protect their radar systems from jamming. Unlike the previous articles of late 1982 and 1983, no attempt was made to relate the lessons of the Falklands to the discussion.[25]

From 1965 to the present, the Soviet perspective on the radioelectronic struggle has obviously changed considerably. No longer are means for REB considered simply as an extension of maskirovka. The priority of offensive employment of REB means has apparently yielded, at least in the literature,

to the overwhelming importance of defensive employment, particularly against antiship missiles. And the rather blunt expedient of destroying an enemy's electronic means seems now to be accompanied by more sophisticated radioelectronic countermeasures as part of an overall, multifaceted radioelectronic battle. Even the terminology of Soviet REB and Western EW seems to be converging.

Some basic principles of the Soviet perspective on the radioelectronic struggle stand out and warrant emphasis in conclusion. While physical destruction of enemy systems may no longer be a category of REB, it will most certainly be attempted if feasible, in company with offensive radioelectronic countermeasures. True to the Soviet concept of massing, REB measures will be "massed" to ensure dominance of the electromagnetic spectrum at the most opportune time for accomplishment of the mission. Similarly, surprise will be employed in REB whenever possible, most likely by using equipment, frequencies, and/or tactics not before seen by the enemy. Soviet employment of very high altitude bursts of nuclear weapons to interfere with C^3 should be expected.

If the literature is any indication, the West can expect to see larger numbers of automatic ASMD gatling-type guns on Soviet ships and considerable improvements in both passive detection means and active ASMD countermeasures in the near future. Also, Rodionov and Novichkov have for many years been advocating the development of airborne early warning capabilities that would be organic to Soviet naval groupings, whether airplane, helicopter, or airship based; the Falklands War has proven the validity of their arguments. The results may be a new Soviet AEW capability by the end of the 1980s.

It is clear from the literature that the radioelectronic struggle is the focus of Soviet naval attention for the mid-1980s. The United States and Nato must therefore be prepared for considerable Soviet strides in naval electronic warfare.

Notes

1. For example, G. Guy Thomas, "Warfare in the Fourth Dimension Is the Navy Ready for it? How Can the Navy Prepare for It?" *Naval War College Review*, January-February 1983, pp. 16-23; Christian Eliot, "Trends in Electronics in Warfare," *NATO's Sixteen Nations*, April-May 1983, p. 62; "The Falklands Experience: Electronic Warfare," *Navy International*, June 1983, pp. 373-378; Stefano Silvestri, "The New Electronic Warfare," *World Press Review*, January 1983, pp. 36-37; and James Freeze, "Exocet Threatens the Navy's Position," *Military Electronics/Countermeasures*, March 1983, pp. 65-67.

2. *Dictionary of Basic Military Terms: A Soviet View* (Translated by the DGIS Multilingual Section, Translation Bureau, Secretary of State Department, Ottawa, Canada), (Washington: U.S. Govt. Print. Off., 1976, SN 008-070-00360-1), pp. 181-182.

3. See Floyd D. Kennedy, Jr., "Maskirovka: A Pervasive Element of Soviet Naval Doctrine," *Fleet Antisurveillance Tactics Digest*, December 1982, pp. 2-8.

4. V.S. Pirumov, A.B. Yemel'yanov and A.P. Il'ich, "Radioelectronic Struggle in War at Sea," *Morskoy Sbornik*, July 1970, pp. 46-49.

5. V.K. Rachkov, M.S. Mikhed'ko, and D.M. Makarov, "Development of Radioelectronic Countermeasures in Naval Warfare," *Morskoy Sbornik*, May 1971, pp. 27-31.

6. A. Il'in, "How NATO Naval Forces are Preparing for Electronic Warfare," *Morskoy Sbornik*, March 1973, pp. 75-77.

7. V. Grankin and V. Zmierskiy, "From the History of the Radioelectronic Struggle," *Voyenno-istoricheskiy Zhurnal*, March 1975, pp. 82-88.

8. M. Mikhed'ko, "Radioelectronic Struggle and the Submarine," *Morskoy Sbornik*, January 1976, pp. 90-94; V. Grisenko, "Naval Air Power and the Radioelectronic Struggle," *Morskoy Sbornik*, June 1976, pp. 99-105.

9. Sergei G. Gorshkov, *Sea Power of the State* (Moscow: Voyenizdat, 1976), pp. 339-340.

10. Sergei G. Gorshkov, *Sea Power of the State*, 2nd ed. (Moscow: Voyenizdat, 1979), p. 301.

11. G. Byakin, "Radar Countermeasures Abroad," *Morskoy Sbornik*, April 1977, pp. 79-83.

12. A.I. Paliy, "Radioelectronic Struggle During the (Great Patriotic) War," *Voyenno-istoricheskiy Zhurnal*, May 1977, pp. 10-19.

13. Pertsov, "The Effect of a Nuclear Burst on Communications," *Tekhnika i Vooruzheniye*, July 1977, p. 14.

14. V. Charkin and V. Solov'yev, "Controlling a Force in a Naval Battle," *Morskoy Sbornik*, January 1978, pp. 22-26.

15. V. Sysoyev, "Evolution of Force Control," *Morskoy Sbornik*, February 1978, pp. 53-59.

16. B. Rodionov and N. Novichkov, "Is the Missile Defense Problem Solvable?" *Morskoy Sbornik*, May 1978, pp. 96-103.

17. A.I. Paliy, "Radioelectronic Struggle," *Sovetskaya Voyennaya Entsiklopediya*, v. 7 (Moscow: Voyenizdat, 1979), pp. 29-30.

18. A.I. Paliy, *Radioelectronic Struggle: Means and Methods of Suppression and Protection of Radioelectronic Systems* (Moscow: Voyenizdat, 1981), pp. 272-280.

19. For a discussion of the issues debated in Soviet articles on control of naval forces in maritime theaters of operations see Floyd D. Kennedy, Jr, "Soviet Doctrine for Mutual Cooperation: the Naval/Air Force Context," *Naval Intelligence Quarterly*, December 1981, pp. 9-32.

20. V. Grisenko, "Shipboard ECM Equipment in the U.S. Navy," *Morskoy Sbornik*, April 1980, pp. 78-82.

21. G. Popov, "The Role of Electronic Systems in the Activities of Navy Forces," *Morskoy Sbornik*, November 1982, pp. 75-77.

22. I. Uskov, "Lessons of the Anglo-Argentine Conflict and the Role of Surface Ships in Conflict at Sea," *Morskoy Sbornik*, November 1982, pp. 87-92.

23. B. Rodionov, Ye. Nikitin, and N. Novichkov, "Radioelectronic Warfare in the South Atlantic," *Morskoy Sbornik*, January 1983, pp. 77-85.

24. I. Kapitanets, "The Navy's Role in the Anglo-Argentine Conflict," *Morskoy Sbornik*, February 1983, pp. 14-20.

25. A. Il'in and B. Azarov, "Protection From Radar Jamming," *Morskoy Sbornik*, April 1983, pp. 65-68.

The Strategic Thought of Paul H. Nitze[1]

Gary L. Sojka

Of the many individuals who have helped shape the theory and practice of American national security policy in the post-World War II era, few have had as continuing an influence as Paul H. Nitze. Even a partial listing of his achievements is enough to demonstrate the degree of his importance:

- The principal author of the 1946 *Summary Report (Pacific War)* to the United States Strategic Bombing Survey (USSBS), he produced one of the seminal works on the strategic implications of nuclear weapons.[2]
- As head of the 1950 State-Defense Policy Review Group, Nitze was the primary author of NSC-68, the first truly comprehensive statement of American national strategy.[3] His most famous work, NSC-68, provided the blueprint for the Truman administration's defense buildup. In addition, the postulates about the Soviet Union and about the nature of the world articulated in NSC-68 have to one degree or another governed American national security programs for the last 30 years.
- A principal participant in the Gaither Committee's 1957 report *Deterrence and Survival in the Nuclear Age* and the Senate Foreign Relation Committee's 1959 study *Developments in Military Technology and Their Impact on U.S. Strategy and Foreign Policy,* Nitze helped provide the rationale for the nuclear defense buildup that occurred during the Kennedy/Johnson administrations.[4] The reports signaled a major shift in strategic thinking. They helped overturn the assumption that the nuclear balance between the United States and the Soviet Union was inherently stable. Rather, they advanced the view that the balance required careful management to ensure stability.
- Having served as John Kennedy's chief campaign advisor on defense during the 1960 presidential campaign, Nitze was appointed Assistant Secretary of Defense for International Security Affairs. He subsequently became Secretary of the Navy, and finally Deputy Secretary of Defense. During these years, he played key roles in developing the policy of flexible response, refocusing the Navy on the mission of sea control, and introducing MIRVed SLBMs.
- As a senior representative to the SALT I negotiations, Nitze was the primary American author of the ABM treaty, widely regarded among arms

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control experts as one of the most significant and successful arms control agreements reached between the Soviet Union and the United States.

- Out of government service during the late seventies, and as Director of Policy Studies for the Committee on the Present Danger, Nitze successfully led the fight against ratification of Salt II and against the overall defense policies of the Carter administration. His writings during this period again provided a rationale for an American defense buildup, the one now occurring under the Reagan administration.
- At this writing, as Ambassador to the Intermediate Range Nuclear Force (INF) Talks, Nitze is again a key participant in a major United States' arms control negotiation.
- Perhaps most important is Nitze's imprint on the overall political process. Throughout the last 35 years, he has been the leading and most influential figure of that group of advocates who have called for a strong US military posture in order to contain Soviet influence. More than any other figure in the postwar era, it is Nitze who has provided the intellectual rationale and fiber for such a posture.

Despite Nitze's continuous and powerful influence on national security policy, no systematic study of his strategic thought exists. This essay outlines Nitze's thinking and identifies those areas—deterrence and crisis stability—in which he has had a truly original and important impact on American strategic theory. The focus is strictly political-military; that is, it looks at Nitze's views on what type of defense posture the United States should seek and why. It only tangentially addresses Nitze's thinking on arms control, as this is a subject worthy of a separate study. Nevertheless, since Nitze believes that arms control complements a strong defense, the views outlined in this paper are essential if one wishes to gain an insight into his method of evaluating arms control proposals.

This writer argues that the two most important concepts for understanding how Nitze looks at defense questions are *flexible response* and *crisis stability*. Further, that these concepts rest upon his views on the more fundamental question of national strategy, and that Nitze's strategic thought is a product of his value system and his understanding of the world. Thus, this study traces Nitze's views from his most basic postulates of reality—the roots of his strategic thinking—to his most refined strategic concepts, the ones which guide his policy preferences.

The Roots of National Strategy

A Theory of International Relations. Nitze began to articulate his views on the nature of international relations in the late 1950s, while associated as a lecturer and scholar with The Johns Hopkins University. Having already

served in key government positions, his objective was to test his actions in light of theory and to test theory in light of his actions—the goal was to produce conceptual guidelines for the practitioner. In 1959, he published the "Necessary and Sufficient Elements of a General Theory of International Relations" in T.R. Fox's book *Theoretical Aspects of International Relations*.[5] The article is Nitze's reasoned synthetic, statement about the nature of international politics, and it continues to be a valid reflection of his thinking on the subject.

Nitze identifies three concepts as necessary and sufficient to the understanding of international relations: structure, purpose, and situation.[6] He defines structure as the myriad political groups which exist at a given period of time, and loosely defines purpose as the hierarchy of values (i.e., a value system) to which each of these political groups subscribes. Situation is the context (e.g., physical, economic, and technical) in which purpose and structure interact.

Nitze suggests that the policymaker in scanning the international horizon at any given moment should give primacy to structure, simply because it is a useful starting point to determine what is going on. "My suggestion is that even before one talks about purpose one has to be clear about whose purpose it is one is referring to and on whose behalf the purpose is directed—and that this requires an analysis of political structure."[7] Later he writes: "In almost every problem of international politics, the first question to be asked is, in the particular context, who is to be regarded as the 'we' and who is to be regarded as the 'they.'"[8]

But giving primacy to structure in a heuristic sense does not mean that Nitze thinks situation or purpose are any less important to the practitioner. Situation—the physical, technological, and economic reality—is obviously important. And, in Nitze's view, purpose is integral to both group and individual behavior. In a recent seminar on strategy he stated, "Purpose is the central question of action, and much of strategy depends upon what one's purpose is."[9] This last sentence is an important recognition by Nitze, because in all except the previously mentioned heuristic application, it is purpose—not structure—which he sees as the motive force in international politics. His writings over the past 35 years have continually focused on purpose, and it is his sense of purpose which largely defines the strategy he believes the United States should follow.

A Philosophy of Political Morality. Nitze's own sense of purpose and his recognition of the importance of purpose to international behavior are crucial to understanding his strategic thinking; but even these fundamentals rest on a deeper one. According to Nitze, a method is needed to evaluate competing purposes. He states: "How one judges purpose is important. It makes a lot of difference whether or not Western culture is superior to Communism."[10]

A student of Thomas Acquinas since his college days, Nitze's evaluation relies heavily upon Thomistic philosophy and, in particular, on its premise that there is an irreducible ethical framework which can be approximately realized. In his 1960 Church Peace Union article, "The Recovery of Ethics," he writes, "There exists an ethical framework which has objective reality, to which men can aspire to have some degree of understanding not perfect, but approximate—and which can give a measure of guidance to those who seek it."[11] More recently, in answer to the logical follow-up question of whether a society conforming to such an ethical framework can be approximated in reality, he cites Spengler: "The main point that struck me about Spengler was that he seemed to me to offer a solution to the problem of [moral, cultural, historical] relativity. Even though things were different in each era, you could take the view that, whereas every man's viewpoint was very much molded by the particular generation in which he happened to be born and the possibilities very much limited by that generation, still there was a distinction between what was a better development for that era and what was a worse development—and that it is, therefore, worth concerning oneself with things that were in the realm of the possible, even though these things might differ vastly from what was within the realm of the possible in a different generation."[12]

The proposition of an objective morality which can be perceived and realized is certainly interesting and important, so much so that moral philosophers continue to debate both its validity and its implications. But leaving aside a discussion of the merits and demerits of this proposition, it is crucial to understanding Nitze. The point is that national security policymakers deal with problems of great complexity, ambiguity, drama, and importance, and with all tbe consequent moral and psychological stress associated. Particularly in the present era—with the existence of nuclear weapons and ever more devastating conventional ones—it is very difficult, though certainly not impossible, to support policies of deterrence and defense if value systems are relative, with no system superior to another. But if value systems can be placed on a superior-inferior hierarchy and one is certain that his society subscribes to a high quality system, then he is on much more solid ground in arguing for the military means to protect it. It is largely because Nitze's views are lodged in the belief of an objective morality and in the belief that such a morality can be approximately perceived and realized by society that he promotes his national security views with the certainty and energy ascribed to him.

Political Purpose: Nitze's Criteria of Evaluation and His Conclusions. Nitze's criteria for appraising a value system are its ability to optimize the potentialities of man and its ability to stay within the realm of the possible.[13] The closer a system satisfies these criteria, the better it is. Nitze has never systematically listed the values to which a society must adhere to optimize

man's potentialities, but he has offered some hints and does cite the preamble of the Constitution as the succinct answer to the question.[14] He suggests that such a society would sustain and promote the intangible qualities of freedom, tolerance, diversity, and inquiry; support a high degree of individual excellence; and reduce unjustifiable economic inequalities while maintaining a decent standard of living. Nitze's second criterion—the realm of the possible—is his caveat against too rigid an adherence to the first. The realm of the possible can be expanded, but not infinitely. The attempt to create the perfect man (utopia), he believes, paradoxically but inevitably leads to a high degree of centralization of power, conformity, control, and corruption, which destroys those intangibles that are the bases upon which man's development rests. Focusing on these considerations, Nitze has continually favored the mixed economies and democratic forms of government which characterize the Western industrial state, rather than the centralized, statist economies and governments of totalitarian systems.

National Security Policy: The Roots of Internationalism and Containment

In the *Political Aspects of a National Strategy,* published by Johns Hopkins in 1957, Nitze writes that the purpose of such a strategy ". . . is to promote and secure conditions in the world under which a nation with such purposes as ours can live and prosper. U.S. interests and U.S. security are thus dependent upon the existence, or the creation and maintenance, of some form of world order compatible with our values and interests."[15]

For the last 35 years, Nitze's constant refrain has been that the Soviet Union's imperial and hegemonic aspirations pose a threat to the postwar order, an order which has been basically compatible with America's values. NSC-68 states: ". . . the Soviet Union, unlike previous aspirants to hegemony, is animated by a new fanatic faith, antithetical to our own, and seeks to impose its absolute authority over the rest of the world."[16] Some 30 years later the theme remains unchanged: "The Kremlin leaders do not want war; they want the world."[17]

It is not only Nitze's perception of the Soviet Union, but also his past experiences—the fact that he has lived through two world wars—which have turned him into an internationalist. Prior to World War II in particular, he witnessed and shared the growing feelings of insecurity among the American people towards regimes whose ambitions seemed boundless and whose fundamental purposes were clearly antithetical to those of the United States. This combination of past experience and perception of the Soviet Union has led him to accept the type of speculative but prudent considerations bearing on the rejection of isolationism in NSC-68:

"With the United States in an isolated position, we would have to face the probability that the Soviet Union would quickly dominate most of Eurasia, probably without meeting armed resistance. It would thus acquire a potential far superior to our own, and would promptly proceed to develop this potential with the purpose of eliminating our power, which would, even in isolationism, remain as a challenge to it and as an obstacle to the imposition of its kind of order in the world. There is no way to make ourselves inoffensive to the Kremlin except by complete submission to its will.

". . . As the Soviet Union mobilized the resources of Eurasia, increased its relative military capabilities, and heightened its threat to our security, some would be tempted to accept 'peace' on its terms, while many would seek to defend the United States by creating a regimented system which would permit the assignment of a tremendous part of our resources to defense. Under such a state of affairs our national morale would be corrupted and the integrity and vitality of our system subverted . . . .

". . . It is possible that at some point in the course of isolation many Americans would come to favor a surprise attack on the Soviet Union and the area under its control, in a desperate attempt to alter decisively the balance of power by an overwhelming blow with modern weapons of mass destruction. It appears unlikely that the Soviet Union would wait for such an attack before launching one of its own. But even if it did and even if our attack were successful, it is clear that the United States would face appalling tasks in establishing a tolerable state of order among nations after such a war and after Soviet occupation of all or most of Eurasia for some years. These tasks appear so enormous and success so unlikely that reason dictates an attempt to achieve our objective by other means."[18]

The "other means" which the authors of NSC-68 had in mind is known as the policy of containment; and the specifics of this policy, according to Nitze, need to be tailored to the exact nature of the threat. One concept essential to understanding the nature of the Soviet threat, he continues, is the correlation of forces—that is, the evolving political, military, economic, and psychological situation, all of which the Soviets seek to alter in their favor. "When the correlation of forces has evolved significantly in the Soviets' favor, their doctrine calls upon them to exploit that change to nail down permanent gains for their side," he states.[19] This is a cautious policy, though perhaps no less dangerous because it is. But Nitze ends on an even more ominous note: "They believe it unlikely, however, that the West will let them have the world without a fight; therefore, they are prepared for the undesirable—to fight and win a nuclear war."[20]

Nitze believes that a multifaceted Soviet threat requires a multifaceted American response. His various writings suggest that the United States must deal with the problem of an unwinnable general nuclear war; military defeat in a conventional or limited nuclear war; political defeat, in the sense of the

Soviet Union acquiring power by exploiting contradictions in the noncommunist world; and the contradictions themselves (which may, of course, give rise to other serious threats to American security—for instance, nuclear proliferation).[21] The American policy of containment must therefore entail economic, political, and military measures. It is the political and, especially, the military measures which have absorbed most of Nitze's energy and attention.

The Political Component of Containment: An Alliance of Free States. In 1950 and 1951, Paul Nitze and other members of the Policy Planning Staff evaluated four alternative future worlds, and America's position within them, after a hypothetical US military victory over the Soviet Union.[22] At first glance, such an exercise might seem of little immediate value to the problems of American national security in the real world. In fact, given America's basically predominant worldwide position vis-à-vis the Soviets for the immediate postwar era, an analogy exists between the basic assumption of the exercise and reality, and Nitze was fully aware of this. Moreover, the conclusions of the exercise articulated views Nitze had only partially developed before, and they have played a large role in Nitze's thinking ever since.

The study began with an analysis of *Pax Americana,* in which the United States would be the only world power. The authors rejected such a structure as not feasible. They felt that the American people were not disposed towards it, especially since the very existence of a dominant power usually causes it to be the object of worldwide opposition. Nitze states:

". . . everybody around the world would press against the central power. We would have the hatred of at least the opposition and the potential opposition of everybody. Could you visualize the United States doing what was necessary to maintain a *Pax Americana*? At least we could not foresee, even after a war, that the American spirit would be thus oriented. A consensus in the United States didn't exist for that kind of world; and so, therefore, that wasn't a solution."[23]

The second possible solution was world government. But, according to Nitze, nation states would probably still hold vastly different conceptions about what constitutes a moral international order, and therefore the requisite consensus and ability to compromise for the proper functioning of world government would not exist.

The third possible solution, a balance of power system, in which the United States pursued its own narrow interests, was also not feasible. The United States might not exercise formal control over other countries but, not unlike *Pax Americana,* it would be the predominant power and the alignment of alliance structures would consequently be oriented against it.

The solution the authors sought was a modified *Pax Americana.* They acknowledged that, if the United States defeated the Soviet Union, it would

be the predominant power, a reality which would simply not go away. The American strategy would be to stress the commonality of purpose the United States had with other democracies and to cooperate with them and others to form a world order compatible with the purposes of democracies. The United States would also work to strengthen the United Nations to make it as useful and as helpful as possible in the support of democratic societies.

To the extent that the real world corresponds to this hypothetical world, American responses have to some degree also corresponded. The Atlantic Alliance may be seen as one embodiment of the type of thinking found in this study and of similar stated and unstated beliefs on the part of many Americans about the nature of the world during these years, and about what they thought the United States should do about it. Even until today, Nitze has not given up on the vision of a Free World or, perhaps more broadly, a free association of states, preferably democratic, but at least independent of Soviet domination and respectful of other forms of government. As he sees it, America's commitment to the welfare of this association has great symbolic importance: "If the United States were to focus strictly on narrow national interests rather than maintenance of a system under which it and other nations with comparable values could survive and prosper, then these nations would begin to advance their own narrow interests. The British would advance primarily British interests, the French would advance French national interests. Hostility among like-minded states could ensue and ultimately considerable apathy to the defense of a system in which narrow interests were constantly advanced, no matter how independent and free the states and the people within these states."[24]

Nitze's belief that the United States must be committed to supporting an association of noncommunist states has its limits. For reasons outlined in the "War Aims" study, he has never believed that the United States has been capable of sustaining a containment policy which included defending every noncommunist state from communist encroachment, even if, in the particular instance, the result were to be close ties with the Soviet Union. In the late 1940s, he concurred with the Joint Chiefs of Staff that the defense of Taiwan and South Korea were not vital to the security of the United States; that American military forces could not be prudently made available for their defense; and that, therefore, the United States should not do so.[25] In both the Kennedy and Johnson administrations, he cautioned about the dangers of escalating the Vietnam War.[26] The presumable insight into Nitze's sense of priorities from these examples is that, while the United States must actively participate throughout the noncommunist world in resisting communism, the military defense of the Free World (i.e., interpreted here to mean roughly Japan, North America, and Western Europe) is clearly vital, but not the military defense of every single noncommunist state.

The Role of Defense in Containment. One reason for Nitze's continual focus on defense issues is because these include some of the most pressing and central problems facing the postwar generations (e.g., the problems associated with nuclear war). Another is his assessment of Soviet strategy to which America must respond: "In the correlation of forces . . . the balance in military factors plays a particular and fundamental role in their [the Soviets'] appraisal."[27] Equally important, he believes that only in the military sphere could America win or lose the struggle in a short period of time. In this belief, the experiences of his life are again apparent. The beginning of NSC-68 states: "Within the past thirty-five years the world has experienced two global wars of tremendous violence. . . . It has also seen the collapse of five empires—the Ottoman, the Austro-Hungarian, German, Italian and Japanese—and the drastic decline of two major imperial systems, the British and the French. During the span of one generation, the international distribution of power has been fundamentally altered."[28] Reflecting on this passage recently, Nitze commented, "These [structures] can go very fast."[29]

In dealing with the threat posed by the Soviet Union, one important policy option rejected by Nitze and the other authors of NSC-68 was preventive war. Aside from the calculation that, given US capabilities at that time, such a war would be protracted and difficult to fight, the authors concluded that it would be "morally repugnant to many Americans."[30] They continued that ". . . the shock of responsibility for a surprise attack would be morally corrosive. Many would doubt that it was a 'just war' and that all reasonable possibilities for a peaceful settlement had been explored in good faith. Victory in such a war would have brought us little if at all closer to victory in the fundamental ideological conflict."[31]

There is considerable strategic and symbolic significance to the rejection of preventive war. If the United States had ever been in a position to win such a war, it was in the late 1940s and early 1950s. However, the authors argued that a military victory would not have resolved the more fundamental ideological conflict. If the authors were correct, then such a war would have made no sense. But if they were wrong, then the United States' decision not to penetrate the Soviet Union militarily meant that it probably relinquished its only real chance to penetrate the Soviet Union ideologically and economically, thereby altering in a short period of time its fundamental intentions.

The American decision against the option of preventive war goes a long way towards explaining why American responses to Soviet activities have almost always been encapsulated in the overall, defensive policy of containment—a policy which requires the continuous resolve of the American people. Paralleling the strategic significance is the symbolic; that is, the calculations which led to the rejection of preventive war symbolize

how this country's sense of identity and of purpose affects its strategy. In particular, it symbolizes how the American just war ethos contributed in a major way to the elimination of a strategic option.

Nitze's specific views on military strategy have their origins in his participation in the United States Strategic Bombing Survey (USSBS) conducted at the end of World War II. Nitze worked on both the European and Pacific sections of the USSBS; the conclusions he developed from the survey's study of airpower are presented in the *Summary Report (Pacific War)*, of which he was the principal author.

One conclusion which was stressed emphatically in the *Summary Report* was that control of the air was not easily achieved and that it required a sustained national effort.[32] Air superiority, once obtained, suffered from certain limitations, two of which are particularly relevant to the theory of nuclear deterrence: (1) complete air control vis-à-vis Japan was never possible, and (2) well-protected ground targets were difficult to destroy. Despite these problems, the report concludes that air control provided effective protection against enemy surface vessels; permitted amphibious landings; aided ground forces, often decisively; isolated Japan from its sources of overseas supply; and, when applied in a heavy, sustained, and accurate manner against industrial targets and population centers, could obtain decisive results, another conclusion important to nuclear deterrence theory.

In the *Summary Report* Nitze also presents his initial views, crude and unrefined, about the impact of nuclear weapons on strategy. The themes he articulates basically parallel those of Brodie's in *The Absolute Weapon*, which appeared in print about the same time.[33] But the report probably had a bigger influence on government circles than did Brodie's book. In addition, it became a reference source for Brodie's later writings on nuclear strategy.[34] Thus, the *Summary Report* has a legitimate claim to be considered along with *The Absolute Weapon* as the origin of modern day deterrence theory.

Nitze's view of the role of nuclear weapons in future wars rests upon three underlying conclusions: they are by several orders of magnitude more destructive than conventional weapons; no effective defense (including air superiority) is likely to be established that will prevent penetration by enemy planes or guided missiles; and some retaliatory force will survive a nuclear attack.[35] (Note the parallel of these last two conclusions with Nitze's previous ones about the limits of air control against Japan.) It is these conditions which give rise to deterrence born out of a mutual hostage relationship: "The threat of immediate retaliation with a striking force of our own should deter any aggressor from attacking."[36]

Though this last passage suggests otherwise, it is worth noting that Nitze's doctrine of deterrence, unlike Brodie's, is not an imperative springing from the destructive nature of nuclear weapons. According to Brodie, the doctrine of deterrence was the logical response to a weapon whose destructive power

made using it a less and less viable policy option. In a now famous passage from his seminal book, Brodie writes: "Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose."[37]

Certainly, Nitze would not deny a strong relationship between the destructiveness of nuclear weapons and deterrence, but he gives it less value. In a passage from the *Summary Report* clearly contrary to the thrust of Brodie's view, Nitze argues: ". . . the basic principles of war, when applied to include the field of the new weapon, will be found to remain. If such be the case, atomic weapons will not have eliminated the need for ground troops, for surface vessels, for air weapons, or for full coordination among them, the support services and the civilian effort, but will have changed the context in which they are employed to such a degree that radically changed equipment, training, and tactics will be required."[38]

To Nitze, then, deterrence springs ultimately from other sources—strength and the appearance of strength. For Nitze, this is the lesson learned from the failure of the policy of appeasement prior to the outbreak of World War II; he writes: "Prevention of war will not be furthered by neglect of strength or lack of foresight or alertness on our part. Those who contemplate evil and aggression find encouragement in such neglect. Hitler relied heavily upon it."[39]

The difference in emphasis between Nitze and Brodie in terms of their understanding of the meaning of nuclear weapons and of what is important to deterrence helps to explain why they have often advocated such divergent policies. These differences explain why Nitze has continually advocated a much more powerful defensive structure than Brodie and why he continues to study scenarios of winnable nuclear wars.

Refinement of Views: Crisis Stability and Flexible Response. In the *Summary Report*, Nitze saw a role for nuclear and conventional weapons in deterrence and defense. Since then, he has expanded and refined his thoughts by analyzing them according to various criteria. One of the most important is the doctrine of just war. His formulation is that no war is justified unless it serves some rational political objective and unless the use of force is proportional to the objective, although he probably finds acceptable the use of a greater amount of force than most just war theorists. The importance of this doctrine in relation to Nitze is that he has almost certainly ruled out, probably since the mid-1950s, a massive, all-out countervalue attack as a response to aggression, whatever its magnitude. Such is this writer's conclusion; for, despite all the scenarios he has envisioned in his numerous writings, not once has he listed one in which he considers massive countervalue retaliation worth executing. In fact, he has strongly implied the

contrary, arguing that such an attack makes "victory worthless in political terms" and that sole reliance on massive retaliation for deterrence leads to a "politically disastrous and immoral kind of nuclear strategy."[40]

If Nitze has never explicitly ruled out all-out countervalue retaliation, it is because of his belief that deterrence is enhanced by the threat of such an attack and that public statements rejecting such a strategy depreciates its value. To those who believe in an objective morality based on natural law as Nitze does, this line of reasoning faces a serious moral problem. A long-standing principle of this branch of moral philosophy is that a person should never threaten to do something which he actually considers immoral to do. Nitze no doubt sees the defense of Western values as justifying an exception to this rule; still, as with most exceptions, tensions remain (e.g., whether or not the exception is a valid one). Perhaps this, too, helps to explain why Nitze continues to try to escape from heavy reliance on countervalue forces for deterrence, supporting instead a level of military forces in being along with a diversity of capabilities well beyond what many think necessary for deterrence.

Even if the above interpretation of Nitze's view of massive retaliation is fallacious, the thrust of his writings leaves no possible doubt that he considers all-out nuclear war the worst of all possible wars and believes, consequently, that America must advance its objectives in a manner that it virtually negates such an outcome.

Crisis Stability. Does all this mean that Nitze sees no military value to strategic nuclear forces? At the strategic counterforce level, he believes that nuclear forces do have such value. The appropriate implementation of active and passive civilian and military defensive measures, along with warheads that are highly accurate and have yields adequate for their purpose, could make a strategic counterforce attack a viable option for one side, if the other were to fail to do many of the same things. In his 1977 *International Security* article, "The Relationship of Strategic and Theater Nuclear Forces," Nitze argues: "If probable casualties and damage to one side would be three, five or ten times the probable casualties and damage to the other, and if the absolute number of casualties on the stronger side would be a small percentage of the total population, it is not clear that the weaker side should or would meaningfully respond to a counterforce attack."[41]

Nitze attributes this type of thinking to Soviet strategists; he also believes that many Western strategists have failed to take it seriously: "It is because Soviet leaders believe that such one-sided ratios may be achievable that they concentrate so heavily on all aspects of level two [strategic counterforce] and on the civil defense aspects of level one [strategic countervalue]."[42] He argues that the American response should be "a nuclear posture such that, even if the other side attacked first and sought to destroy one's own strategic

striking power, the result of such a counterforce exchange would be sufficiently even and inconclusive that the duel would be extremely unattractive to the other side."[43] Such a posture entails an effective civil defense program; highly redundant command, control, and communications (C^3); but, at the very least, highly survivable land, sea, and air based nuclear delivery systems.

It remains unclear whether Nitze thinks that even such a strategic counterforce war is ever worth fighting; but probably he does, believing that the defense of Western values is of sufficient importance to justify it. Obviously, he would feel more comfortable waging it if the American defense posture included an effective civil defense program and highly redundant C^3, rather than just highly survivable delivery systems. In any case, it is the deterrent value of the posture which he always emphasizes: ". . . to minimize the risks of nuclear war, it would seem to me wise to assure that no enemy could believe he could profit from such a war."[44]

Nitze believes that this type of posture makes the Soviets less likely to challenge American security interests in a major way. But if a crisis should occur, this posture should be sufficient to deter Soviet attacks on American and allied forces and population centers. In strategic lexicon, this is crisis stability; it means an avoidance of nuclear war *without* compromising Western security interests to a Soviet challenge. In his writings, Nitze continually refers to the need for crisis stability and cites examples of it at work: the Cuban Missile Crisis, the Soviet-American confrontation over the 1973 Arab-Israeli War, and the successive Berlin crises of the late 1950s and early 1960s.[45] In all cases, the United States enjoyed either strategic superiority or equivalence to the Soviet Union. The Soviets would have gained nothing from escalating the crises and, therefore, he believes, the United States was able to resist their pressures with confidence.

The concept of crisis stability is central to understanding Nitze and to recognizing his impact on the history of strategic thought. The origins of the concept can be traced back to the writings of both Nitze and Wholstetter in the late 1950s. Both men argued that the nuclear balance between the superpowers was not inherently stable, but rather required maintenance of an adequate second strike capability to insure stability. Wholstetter's 1959 *Foreign Affairs* article "The Delicate Balance of Terror" had its primary impact on members of the foreign policy establishment not in government service.[46] Nitze's 1957 study *Deterrence and Survival in the Nuclear Age* and his 1959 study *Developments in Military Technology and Their Impact on U.S. Strategy and Foreign Policy* had their primary impact within government circles.[47] This is especially true since Nitze held high level Defense Department positions throughout the 1960s and used his influence to make the concept a guiding theme for the development of US strategic nuclear forces. Interestingly, twenty years later, the concept in good

measure guided Nitze's criticisms of the unratified SALT II treaty and, as Fred Kaplan notes, ". . . Nitze dominated the debate."[48]

Flexible Response. Because of the political and ethical problems associated with the massive use of strategic nuclear weapons, one of Nitze's important goals over the years has been to move as far away as possible from reliance on such weapons for deterrence and defense. He believes that against aggression below the strategic nuclear level, the threat of the massive use of strategic weapons may not appear a credible deterrent strategy because it fails to relate ends to means. As a military strategy, it also fails to relate means to ends. Against a strong opponent it invites retaliation; against a weak opponent, it probably is not necessary and, if employed, risks undermining America's image abroad and its morale at home.

In seeking an alternative to massive retaliation, Nitze, as early as NSC-68 and well before it was fashionable, endorsed the doctrine which later came to be called flexible response.[49] He later reaffirmed his support of this doctrine in NSC-141 and in his critique of Dulles' massive retaliation speech.[50] Though other theorists such as William Kaufmann and Henry Kissinger refined the doctrine and provided its most compelling rationales, Nitze was always comfortable with it and worked on implementing it as a policy during the 1960s while he was at the Department of Defense.[51]

The objective of flexible response is to have sufficient conventional capabilities to stop a conventional attack at that level. Only if this is not possible should nuclear weapons be employed; in this case, the goal is to limit the nuclear war to the use of tactical weapons. Only as a last resort should theater and strategic nuclear forces be used.

Nitze acknowledges that like massive retaliation, flexible response has its problems. Neither the United States nor its Western European allies have ever developed sufficient conventional strength to be reasonably certain of containing a Soviet attack on Western Europe at the conventional level. In order to overcome this possible conventional weakness, the members of the North Atlantic Treaty Organization (Nato) have plans for use of tactical nuclear weapons. Yet at this level, too, there are problems, as Nato does not seem to have adequate active and passive defenses, C^3, and troops well trained for the successful conduct of tactical nuclear war.

Despite these problems, Nitze believes that flexible response is compatible with deterrence and, if deterrence should fail, with the prospect of defending America's interests at the lowest levels of violence. To the extent that it has developed forces to support a flexible response doctrine, the United States has a policy that relates ends to means and is therefore credible to deter aggression across the spectrum from conventional war to strategic nuclear war. If low-level violence does occur, the United States has the military capability to defend its interests at that level without escalating and has

sufficient reserve force at higher levels to deter an enemy from escalating the violence. At the highest level of violence, this requires a stable strategic nuclear posture, and thus crisis stability and flexible response are intrinsically related. They are Nitze's concepts of merit, the sinews upon which aggression is deterred and violence is limited.

Conclusion

Paul H. Nitze's strategic thinking is rooted in the American world view, in historical experience, and in certain analytical exercises. The values he seeks to protect, such as democracy, civil liberties, and a mixed economy, are quintessentially American values; his use of religious concepts to interpret reality and to provide guidance for action also reflect the imprint of American society on him. Like many people of his generation, the combined experiences of the Great Depression and World War II served to reaffirm his devotion to American values. As a result of the Great Depression, Nitze seriously evaluated alternative political-economic systems and concluded that the democratic, mixed economies of the West was the preferable choice. Both his immediate prewar experience (a disturbing trip to Germany in which he beheld Nazism with horror) and his war experience caused him to reject the isolationist position he held in the early and mid-1930s. These experiences also convinced him that a strong and vigilant defense was required to protect American values against those openly hostile to them. After the war, Nitze's work on various studies concerned with American national security served to further develop his thinking on this subject. At the pinnacle of his thought are two concepts, crisis stability and flexible response, designed to protect American values, deter war, and limit war's destruction should it occur.

Notes

1. This paper is based on information obtained from published articles, Nitze's private papers, personal interviews, and declassified government documents. As government documents are often the product of group efforts and do not always represent the views of a particular individual in the group, the author quotes these documents only when he is certain that they reflect Nitze's autonomous thinking.

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4. NSC-5724, *Deterrence and Survival in the Nuclear Age*, 7 November 1957, Modern Military Records Division, National Archives. Also see *Developments in Military Technology and Their Impact on U.S. Strategy and Foreign Policy* (Washington: Senate Foreign Relations Committee [FRC], 1960).

5. Paul H. Nitze, "Necessary and Sufficient Elements of a General Theory of International Relations," in W.T.R. Fox, *Theoretical Aspects of International Relations* (South Bend, Ind.: University of Notre Dame Press, 1959), pp. 1-14.

6. *Ibid.*, p. 2.

7. *Ibid.*, p. 3.

8. *Ibid.*, p. 5.

9. Paul H. Nitze, "Strategy in Pursuit of Political Purpose," Lecture 4, The Johns Hopkins University, Washington, 14 October 1981.

10. *Ibid.*

11. Paul H. Nitze, *The Recovery of Ethics* (New York: The Church Peace Union, 1960), p. 19.

12. Interview with Paul H. Nitze, 8 July 1981.

13. Paul H. Nitze, "Strategy in Pursuit of Political Purpose," Lecture 1, The Johns Hopkins University, Washington, 16 September 1981.

14. NSC-68, *FRUS*, p. 238. Also see Paul H. Nitze, *The Political Aspects of National Strategy* (Washington: SAIS Center of Foreign Policy Research, 1960), pp. 1-2.

15. Nitze, *The Political Aspects of National Strategy*, p. 2.

16. NSC-68, *FRUS*, p. 237.

17. Paul H. Nitze, "Strategy in the Decade of the 1980s," *Foreign Affairs*, Fall 1980, p. 90.

18. NSC-68, *FRUS*, pp. 280-281.

19. Nitze, "Strategy in the Decade of the 1980s," p. 83.

20. *Ibid.*, p. 90.

21. *Ibid.* Also see Paul H. Nitze, "Assuring Strategic Stability in an Era of Détente," *Foreign Affairs*, January 1976, pp. 207-232; and Paul H. Nitze, "Should Nuclear Weapons Be Used in a Limited War," Address, Air Force Scientific Advisory Board, Chandler, Ariz., 5 December 1957.

22. Interview with Paul H. Nitze, 8 July 1981. According to Nitze, Secretary of State Dean Acheson considered the final version of the "War Aims" paper so sensitive that he eventually had it destroyed. An early version of the paper did, however, survive. See "Draft paper prepared by Messrs John Patton Davies, Jr., and Robert Tufts of the Policy Planning Staff, Washington, June 26, 1951, Subject NSC-79," in *FRUS: 1951* (Washington: US Govt. Print. Off., 1979), pp. 94-100.

23. Interview with Paul H. Nitze, 8 July 1981.

24. Nitze, *The Recovery of Ethics*, p. 17.

25. However, once the United States became involved, he did not think it prudent for the United States to withdraw its forces. He continues to support their current presence as a stabilizing influence on the Korean peninsula. See Paul H. Nitze, "The Development of NSC 68," *International Security*, Spring 1980, pp. 170-176. Also see interview with Paul H. Nitze, 29 September 1981.

26. Alan Tonelson, "Nitze's World," *Foreign Policy*, Summer 1979, p. 88.

27. Nitze, "Strategy in the Decades of the 1980s," p. 83.

28. NSC-68, *FRUS*, p. 237.

29. Interview with Paul H. Nitze, 8 July 1981.

30. NSC-68, *FRUS*, p. 281.

31. *Ibid.*, pp. 281-282.

32. United States Strategic Bombing Survey, pp. 29-30.

33. Both the *Summary Report* and *The Absolute Weapon* appeared in 1946. See Bernard Brodie, ed. *The Absolute Weapon: Atomic Power and World Order* (New York: Harcourt Brace, 1946).

34. See Bernard Brodie, *Strategy in the Missile Age* (Princeton: Princeton University Press, 1965).

35. United States Strategic Bombing Survey, pp. 29-30.

36. *Ibid.*, p. 30.

37. Brodie, *The Absolute Weapon*, p. 76.

38. United States Strategic Bombing Survey, p. 30.

39. *Ibid.*, p. 32.

40. Nitze, "Assuring Strategic Stability in an Era of Détente," p. 213; and Nitze, "The Development of NSC 68," p. 175. Also see Paul H. Nitze, "Foreign Policy and Moral Responsibility," Address, National Council of the Churches of Christ, Greenwich, Conn., 1 November 1954.

41. Paul H. Nitze, "The Relationship of Strategic and Theater Nuclear Forces," *International Security*, Fall 1977, p. 124.

42. *Ibid.*, p. 124.

43. Nitze, "Assuring Strategic Stability in an Era of Détente," p. 213.

44. *Ibid.*, p. 232.

45. *Ibid.*, pp. 209-215. Also see Nitze, *Developments in Military Technology and Their Impact on U.S. Strategy and Foreign Policy*, pp. 85-91.

46. Albert A. Wholstetter, "The Delicate Balance of Terror," *Foreign Affairs*, January 1959, pp. 211-234.

47. NSC-5724, *Deterrence and Survival in the Nuclear Age*; and FRC, *Developments in Military Technology and Their Impact on U.S. Strategy and Foreign Policy*.
48. Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983), p. 381.
49. NSC-68, *FRUS*, pp. 284-292.
50. Kaplan, pp. 137, 186.
51. See William Kaufmann, *The Requirements of Deterrence*, Memorandum 7 (Princeton: Princeton Center of International Studies, 1954), and Henry Kissinger, *Nuclear Weapons and Foreign Policy* (New York: Council on Foreign Relations, 1957).

Ψ

People and Performance

A military leader, too, knows both times. But traditionally he rarely had to live in both at the same time. During peace he knew no "present"; the present was only a preparation for the future war. During war he knew only the most short-lived "future"; he was concerned with winning the war at hand. Everything else he left to the politicians.

That this is no longer true in an era of cold wars, near wars, and police actions may be the single most important reason for the crisis of military leadership and morale that afflicts all armed services today. The military today lives neither in "peace" nor in "war"; it lives in something we call "defense," which is a state of preparedness akin closely to what was "all-out war" yesterday but aimed not at "winning" but at preventing actual conflict. As a result, military objectives and military planning in the traditional sense no longer apply. Both assumed a sharp conflict between present and future, rather than the profound ambiguity of the modern political and military world.

Taken from Peter Drucker, *People and Performance: The Best of Peter Drucker on Management* (New York: Harper & Row, 1977).

A Clash of Cultures: The Expulsion of Soviet Military Advisors from Egypt

Colonel E.V. Badolato, US Marine Corps

The US Government is as heavily involved with the Egyptian armed forces as any other military in the world, including the Israelis. In 1981 the United States agreed to support Egypt's Five-Year Plan to rebuild its armed forces, and we are providing billions of dollars in equipment that includes tanks, antitank weapons, air defense systems, and some of the latest fighters in our inventory. We now have hundreds of US military personnel living and working in Egypt with our military assistance teams; US military units have conducted joint desert exercises with the Egyptian armed forces.

This heavy involvement may have some serious future implications if we examine the Egyptians' previous relationship with the Soviets. For example, who can say what Egypt's intentions will be in 1986 after its army is rebuilt into a regional superpower? Twelve years ago President Sadat stunned the world by expelling the Soviets' massive military presence from Egypt.

In hindsight, the Egyptian-Soviet break appears to have been caused by the complex influences of political, economic, military and cultural forces, with the intercultural problems eventually becoming the straw that broke the camel's back. The relationship of the Egyptian military and its Soviet advisors represents—on the Rnssians' part—a classic example of how to exacerbate cultural differences. Soviet indifference and rudeness eventually became a major factor in the ultimate Egyptian decision to expel them. In looking back over the entire seventeen year history of the Russian stay in Egypt, it is evident that the Soviets could hardly have done worse, even if they had deliberately set out to antagonize their Egyptian clients. This article will briefly outline the historical background of the Soviets in Egypt, discuss the termination of their military advisory role, and then examine in some detail the perceptions and cultural problems which caused the expulsion.[1]

Background: 1955-1972. The Soviets first became influential in Egypt in 1955, barely three years after the Free Officer's Movement overthrew King

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Farouk. Soon after the coup d'etat, Nasser made a strong plea to the United States for the arms required to put the Egyptian Army on an equal footing with the Israelis. When no progress could be made, Egyptian public opinion as well as pressure from his officer corps persuaded Nasser to turn toward the Soviet Union. It was during this time that Egypt and the Soviets began to evaluate each other and both saw the potential value of a military relationship. At first, the Russians moved very cautiously. It was the year of the Four Power summit in Switzerland and they did not want to prejudice the "spirit of Geneva." They suggested to the Egyptians that the arms transaction be nominally concluded through Czechoslovakia.[2] This was acceptable to the Egyptians and on 27 December 1955, Nasser announced the conclusion of a trade agreement in which Czechoslovakia made a commitment to supply arms "according to the needs of the Egyptian Army on a purely commercial basis."[3] The Soviets had their foot in the Middle East's door, and they would get a lot of sand on that boot over the next seventeen years. Moscow quickly showed that it would establish strong ties with Egypt and expanded its role to the equipping and training of the Egyptian Army.

The 1956 Suez war provided the Soviet Union with an even greater opportunity to demonstrate its good will and patronage to Egypt. The Israelis invaded Sinai 29-30 October 1956, and the British and French followed the next day. The Russians were slow to react to this crisis because at that same time, the Soviet Army was tied down with combat operations in Hungary and it took nearly a week to respond to the Middle East. Soviet Chairman Nicolai Bulganin sent threatening notes to the French, British, and Israeli governments, which along with US pressure, brought about a cease-fire on 7 November. Then the Soviets became even more strident in their diplomatic action and through Tass loudly proclaimed their support for Egypt. "Soviet citizens among whom there are great numbers of pilots, tankmen, artillery men and officers who took part in the Great Fatherland War (World War II) and are now in reserve, asking to be allowed to go to Egypt as volunteers so as to fight together with the Egyptian people for the expulsion of aggressors from Egyptian land."[4] This support, along with another arms deal concluded immediately after the fighting had a favorable impact on Egyptian public opinion.[5]

However, after the systematic and total destruction of the Egyptian Army by the Israelis during the June 1967 Six Day War, the situation began to change. The Egyptians became disillusioned under the pall of defeat. With some justification they felt that the Russians had let them down in this terrible crisis. Anti-Soviet sentiment began to surface and Nasser himself contributed to this Arab hostility. In his resignation speech of 9 June 1967, he described how Egypt's defeat was in part caused by its heeding Moscow's urgent request not to start a war.[6] Iu the period of postwar depression and humiliation, Egyptian soldiers and airmen began to talk against their Soviet

advisors. Mohammed Heikal states that some of the resentment against the Russians found its way into the press in 1967. He tells the following story: "One of the experts, [Russian] who had been attached to the air force, wrote a report in which he claimed that its officers, especially those in the Cairo West Base, were lazy and incompetent. The Russian claimed that after the first Israeli strike, he had noticed that there were three Sukhoy [aircraft] still intact on the runway, so he told some of the pilots to fly them to safety. They said they had no orders, and after a quarter of an hour the Israelis came back and destroyed these planes too. This report reached General Fawzi, the new Minister of War, and helped to exacerbate feelings."[7]

From 1967 onward, the relationship of the Soviet advisors and the Egyptian military seemed to be troubled by friction, strained feelings and mistrust. The sudden death of President Nasser did not ease the situation. On 28 September 1970, less than 24 hours after he had mediated an end to fighting in Jordan between that Army and the Palestinians, Gamal Abdal-Nasser died of a heart attack. He had ruled Egypt for nearly twenty years and left his country in an almost *de facto* military alliance with the Soviet Union.[8] By 1970, the Soviet Union had, in response to Egyptian requests for assistance, occupied military bases in Egypt and Soviet military personnel were operating aircraft and surface-to-air missile sites. Although they had increased their military aid in certain types of defensive weaponry, the Soviets were not confident about their ability to contain any future contest between the Arabs and the Israelis. Given this situation, the Soviets encouraged a status quo in Arab-Israeli relations, but this situation became very distasteful with the Egyptian leadership. During 1971, the Russian presence became increasingly unpopular.[9] Exasperating the problem was the heavy-handedness of many Russian representatives; friction with the military advisors; the virtual takeover of bases by the Soviets; and a no war no peace situation. Egyptian patience finally wore thin and President Sadat unexpectedly announced the expulsion of Soviet advisors on 19 July 1972.

The Great Divorce: 19 July 1972. The cool deliberate speech in which President Anwar El-Sadat unilaterally terminated the mission of the Soviet advisors was as decisive a shift in Soviet-Egyptian relations as the initial Czech arms deal of 1955. Sadat announced to a jubilant Egyptian people that: "all decisions taken must emanate from our own free will and the Egyptian personality, and in service to the people of Egypt who never accepted to enter into spheres of influence." He added " . . . political decisions must be made in Egypt by its political leadership without having to seek permission from any quarter, whatsoever its status." He noted the clash of Soviet-Egyptian attitudes by saying "there were differences at times in our points of view, but I was always under the impression that these were normal differences."[10]

It is interesting to note that, even though there had been a marked increase in friction between the Russian advisors and the Egyptian military, the decision to oust the Soviets caught Washington completely by surprise. US press reports carried stories of key US officials being "stunned" by the move and that urgent high level meetings were held to assess the move's impact.[11] Secretary of State Henry Kissinger stated that "the decision came as a complete surprise to Washington."[12] But two days after the expulsion speech, Kissinger prepared a reflective analysis in which he set forth his perspective of the ouster as being a result of both US-USSR rapprochement and Egyptian disillusionment. "It has been apparent in the last two months that the Egyptians have resigned themselves to the fact that there will be little diplomatic movement on the Arab-Israeli problem this year because of the US elections . . . . Despite this apparently rational calculation, Sadat has faced the dilemma of how to avoid allowing inaction to produce a permanent freeze of the situation . . . frustration over lack of movement on the Arab-Israeli issue has been high in Cairo. The US-USSR summit confirmed the sense that nothing was going to happen this year and brought to a head criticism of the Soviet role that had been going on in Cairo even before the summit."[13]

The shock of the Egyptian announcement had hardly subsided when most of the approximately 20,000 Soviet advisors were headed back to Russia. This rapid, almost total, Soviet withdrawal was generally attributed to Russian anger over the insulting way in which they were asked to leave. However, a probable underlying cause was Soviet frustration over the Egyptian military's inability to master the equipment they had given them, and that they would never be able to train the Egyptians into an efficient fighting force.[14] Perhaps more descriptive of the Soviet mood toward the Egyptians was the comment attributed to a high Soviet source that "they realized that, if there were to be another round, their Egyptian clients would make such a poor showing that Russia would be made to look ludicrous."[15]

With today's hindsight, it is fairly evident that in addition to cultural problems, the troubles caused by political, economic and military relations also contributed to the break. On the diplomatic side, there is little doubt that the US-USSR summit contributed to the Egyptian perception that both the United States and the Soviet Union had vested interests in maintaining peace (i.e., the *status quo*) in the Middle East. However, the Egyptians became indignant because they saw themselves as the victims of the Soviet desire to maintain a "no peace no war" policy.

Economically, dissatisfaction existed because Egypt was heavily dependent on the sale of cotton to Western markets to earn foreign exchange. Unfortunately, Egypt had to mortgage much of its crop to the Russians to pay for Soviet arms shipments. If this were not enough, added friction resulted from bilateral trade agreements that allowed the Soviets to compete with the

Egyptians in the European cotton markets.[16] This situation usually meant that the Egyptians received depressed prices for their cotton. Such an unfavorable arrangement kept the Egyptians in a continuing debtor relationship with the Russians and severely limited Cairo's ability to obtain either the goods or cash with which to operate their economy.

From the military aspect, there was considerable dissatisfaction, especially at the upper levels, because the Soviets were initially reluctant to provide adequate numbers of offensive weapons to replace the 1967 losses. Nasser's last months as well as Sadat's initial period in office were spent in time-consuming negotiations for Soviet arms. As these negotiations dragged in Egyptian efforts to gain a viable offensive capability, the talks became more like bazaar haggling than discussions between allies.[17]

Culturally, the Soviets were generally obtuse in dealing with the Egyptians. Russian attitudes infringed upon Egyptian sovereignty and cut deeply into Egyptian sensitivity. President Sadat recalls that "the Soviet Union began to feel that it enjoyed a privileged position in Egypt—so much so that the Soviet Ambassador had assumed a position comparable to the British High Commissioner in the days of the British occupation of Egypt."[18] This attitude did little to help Russian popularity in Egypt and strangely, the Soviets did little to change their image. When not on duty the Russian advisors kept mainly to themselves, and even their children had their own playgrounds. Egyptian sources took note that they had even purchased a lot of expensive property in the center of Cairo for their self-isolation.[19] Individually, the Soviets had a reputation for aloofness. This isolation and their personal behavior did not endear them to the normally gregarious Egyptians. For example, when a stranger, an Egyptian, tried out his three words of Russian on them in the street, the Russians usually would look the other way.[20] It should be no surprise that of the various factors affecting the Soviet expulsion—political, cultural, economic and military—the cultural factor probably became the most overbearing to the average Egyptian. On 19 July, after Sadat's expulsion speech, there was a tumultuous outpouring of emotion by the entire Egyptian people. They had perceived a loss of their national self-respect to the Soviet Union, and Sadat's popular act had regained it. With all its efforts, the Kremlin had failed to translate its essentially pro-Arab policy into an effective political relationship with the Egyptian people. This failure can be laid to a severe strain in interpersonal relations caused by cultural differences.

The Egyptian Perception of the Soviets. As a Third World client of the Russians, the Egyptians found the Soviets difficult to deal with at the personal level. For example, after the Six Day War, Egyptian officers generally did not get along well with their Soviet advisors. Various sources claim that one of the Soviet military's main problems was the downward shift in quality and

professionalism of the advisors sent to Egypt after 1967. In this regard, Mohammed Heikal states, " . . . in the aftermath of the 1967 war . . . the current quality of the experts (Soviet) was uneven, and many commanders, junior as well as senior, found their continual presence irksome."[21] Along with this was the mental rigidity of the Soviet military with instances where Soviet behavior was considered totally arrogant and disparaging to the Egyptians.

Another area which contributed to a poor image was the experiences of the Egyptian military students who went to the Soviet Union. It appears that few Arabs visited Russian homes and that there was generally a lack of mixing.[22] Here Heikal quotes a particularly revealing figure. He claims that of the approximately 200,000 Arab military students who have been to the Soviet Union, fewer than 100 have married Russians. Conversely, he claims that half of the 15,000 Arab students who went to the United States in the late fifties and sixties married American girls.[23]

Perception of the Soviets was not helped by their ineptness at cultural exchanges. For instance the Soviet Ministry of Cultural Affairs rented one of Cairo's finest cinemas, the Odeon, to show Russian films. This should have been a successful program because Egyptians love to attend movies. However, the Odeon films were attended by only two to three people per showing. The Egyptian press attributed the poor reception to the films dramatization of socialist values which Egyptians found boring.[24] This disparaging perception of the Soviets continued through the late 1960s and into the 1970s. It is not difficult to understand that these cultural misunderstandings could easily spill over into the military relationship.

Military Problems Arising from Cultural Differences. As the Russian presence in Egypt matured, cultural differences, attitudes and strained personal relationships took their toll on the Soviet military assistance program. Deteriorating interpersonal relationships played a large part in President Sadat's decision to expel the Soviets as he himself noted: "One of the reasons was the Soviet attitude to me . . . ."[25] There can be no doubt that the attitudes and actions of the Soviet advisors caused much friction. In addition to the considerable differences in language and customs, the Russians insulted Egyptian self-respect with their absolute takeover of bases; their condescending attitude toward Egyptian military prowess and the measured amount and poor quality of military equipment allotted to the Egyptian army.

Officially there were no Soviet bases, only "facilities," such as the airfields at Mansura, Jiyanklis, Inchas, Cairo West, Bani Suef, Aswan and others such as Wadi Natrun. They also had naval bases at Mersa Matruh, Alexandria and Port Said.[26] However, as time past, it became apparent that these "Soviet facilities" were a cause of concern among the Egyptians inasmuch as the Russians were behaving like "usurpers." Relationships were strained by

actions in the Nile desert where certain roads leading to Russian installations were closed to traffic, with local inhabitants permitted use only by a Russian pass.[27] Even the usually sympathetic Lebanese-based Communist daily newspaper, *Al Nida*, reported that the Egyptian Command objected to the strict control which the Soviet advisors exercised over the military bases where they were in charge.[28] Israeli sources were aware that the Soviets had restricted access to such areas as Wadi Natrun air base where MIG-23 aircraft were stationed.[29] Recent interviews with Egyptian officers confirmed the denial of entry to Soviet bases to Egyptian officers and emphasized the general indignation at these Soviet prerogatives.

The scope of Soviet basing was the source of many stories that circulated among the Egyptians. There was even a report that Sadat himself no longer had access to Soviet bases on Egyptian soil. In March of 1972 President Sadat invited Libya's President Quadhahafi, who was attending an Arab League Conference in Cairo, to accompany him on a visit to the Soviet naval facility at Mersa Matruh. The two Arab heads of state left Cairo in their official motorcade preceded by the usual security force and motorcycles. Upon arrival, Sadat allegedly became furious when the Soviet Commandant of the facility firmly refused to allow his party to enter. Finally, after telephoning the Soviet Ambassador, Valdimir Vinogradov, in Cairo, it was decided that only President Sadat was to be admitted.[30] The story, probably only partially accurate, is an example of the type of anti-Soviet rumors which commonly spread throughout the country for ready local consumption and embellishment.

Friction with Soviet Military Advisors. "Everyone wanted change because every officer suffered from the advisors" was a comment from a typical high-ranking Egyptian officer.[31] Shortly after the expulsion, the Arab press picked up on the stories concerning strained relationships between Egyptian officers and Soviet advisors, detailing these problems as "important factors in the recall of the Russians," and noting that "daily friction created an unhealthy atmosphere and irritabilities."[32]

The Egyptian military felt that the mere presence of the Soviet military in their country reflected on their self-respect as well as the ability of the Egyptian military to command. But the Soviet mission was much more than a mere mission. The Soviet advisors numbered about 20,000 with approximately 5,000 officers saturating all of the Egyptian military organizations down to battalion and even lower in the case of tank and artillery units. In the Navy there were advisors placed at the top, starting with the Chief of the Navy, down to an advisor on each ship or patrol boat.[33] This saturation of advisory assistance caused a great deal of resentment because the Russian advisors had a direct access to high authorities, and few things escaped their watchful eyes.

The Soviet military style at times added to the Egyptian resentment. In one case a very senior Soviet officer flew to an Egyptian camp and addressed the officers. The Russian arrived on schedule and proceeded to lecture the assembled officers in detail on the virtues of promptness. Apparently unbeknownst to the Russian, his lecture was received as an insult and the Egyptian officers were infuriated that an advisor, a guest, in their country would have the nerve to make such a condescending talk. It is likely that the Soviet officer had little appreciation of the ill will his lecture had caused.[34]

Some sources have reported that many Soviet advisors were frustrated by the difficulty the Egyptians had in grasping highly technical warfare.[35] This Soviet frustration led to an arrogance which infuriated the Egyptians. The Soviet disdain for Egyptian military and technical ability led to a continuing air of mistrust. According to an Egyptian military source, the Soviet advisors continually pointed out Egyptian weaknesses and the Egyptians were perpetually being cast as militarily incompetent. In Cairo one senior Soviet military advisor reportedly told his Western colleague: "You have an expression in the West: 'give us the tools and we'll do the job,' here in Egypt they have changed it slightly. Now it's, 'give us the job and we'll wreck the tools.'"[36]

Another story that made the rounds in 1972 was that the Egyptians realized their Soviet advisors were not giving honest evaluations and assistance in their work such as pointing out errors in the Egyptian situation estimates and war plans. The Egyptian staff came to the conclusion that the Russians had been patronizingly approving any and all Egyptian assessments, no matter how faulty. To confirm their suspicions, a draft sector defense plan was prepared which deliberately left out some basic considerations. The Russians examined the work and then returned the plan with fine grades, thus proving the Egyptian suspicions.[37]

Another area which caused the Egyptian-advisor friction was the Egyptian fear that the Soviets were plundering Egypt's limited supply of gold. It was commonly believed that the Russians were taking advantage of their many military flights between Cairo and the Soviet Union to smuggle out a considerable amount of gold. One story relates how Minister of Defense Sadeq himself supervised the arrest of some Soviet officers at Cairo Airport attempting to smuggle 30 kilograms of gold to Russia. This incident caused a major row with official protests on both sides.[38]

Soviet Military Aid. Following the Six Day War, the Soviet Union's policy was to build up the Egyptian armed forces to a point where they could protect themselves from an Israeli attack. It was not the intentions of the Soviets to provide sufficient weaponry in which the Egyptians could regain its lost territory. For example, the air force initially was rebuilt through the addition of obsolete MIG 15 and 17 fighter bombers from Soviet surplus

stocks. Surface-to-air missiles were not significantly increased and the Russians only symbolically satisfied longstanding Egyptian requests for surface-to-surface missiles and, then, not until well into the War of Attrition. Vital artillery stocks were rebuilt to only about one-third of their prewar levels, and antitank weapons were not significantly modernized.[39] This limiting of the supply pipeline upset Egyptian officers as they perceived that their offensive needs were not being met and this led to a general letdown in morale. The Egyptians soon realized that the Soviets were not ready to fulfill their needs for offensive weapons and this resulted in further haggling over Egyptian attempts to increase arms shipments. Such conflict on the amount and type of Soviet aid contributed to the Egyptian conclusion that "the Soviet Union was getting more out of Egypt than it was putting in."[40] A feeling of being manipulated by one of the superpowers caused a sober assessment by the Egyptians. In discussions with Tito, Nasser expressed the Egyptian frustration when he said, "please tell the Soviet Union that I would be more willing to accept defeat—anything, in fact—than to be treated like this."[41]

The one-sided artillery and air duels over the canal in the War of Attrition, however, convinced the Russians to increase their arms shipments to prevent Israeli domination of the confrontation. Not only did the Soviets dramatically improve the Egyptian air defense, but a cross canal attack capability was provided. However, this move was too little and too late to salvage the Russian image. Egyptian resentment, frustration and the feeling of being used by the Russians in the game of politics with the United States had done irreparable damage.

Restriction in arms shipments was not the only area of concern in dealing with Soviet equipment. The Egyptian military's restiveness was compounded by the belief that it was given obsolete equipment, was provided a minimum of spare parts and ammunition, and was given inadequate instruction on extremely complicated maintenance and operations procedures.[42] It should be noted that complaints about Soviet equipment were not limited to the military. The quality of Soviet bloc products was particularly troublesome to Egyptian technocrats and businessmen, who were well aware of Western standards of quality and who were alarmed at equipment breakdowns and shoddy material. A *Christian Science Monitor* article on this problem noted that: "Egyptian officials and merchants specifically complained about Soviet trucks, Hungarian locomotives, East German automobiles, the higher sulfur content of Soviet crude oil, and the presence of foreign matter in some shipments of wheat sold to Egypt."[43]

The low esteem Egyptians had for Soviet equipment was compounded by the seeming technical superiority of the US equipped Israelis. In fact, after the 1967 war, the Israelis made use of thousands of captured Egyptian vehicles of Soviet manufacture. These vehicles were often the butt of Israeli jokes,

especially the jeeps, which they called "Russian cadillacs," as they sat steaming over alongside Israeli roads.[44]

One well known Egyptian story which illustrates the Egyptian distrust of Soviet equipment relates to the deep strikes of the Israeli air force into Egypt during 1970. The Egyptian air force attempted to challenge and blunt the strikes, but they were unsuccessful, losing one or two aircraft in each attempt. The Russian advisors claimed that the losses were due to the poor quality of the Egyptian pilots, and in denial, the Egyptian pilots publicly claimed that their MIGs were no match for the Israeli phantoms because the MIG was an inferior fighter aircraft. According to various sources the complaining officers were punished, and Soviet pilots were detailed to fly the next interceptor missions to quell the uproar about inferior planes. On 30 July 1970, the first time the Soviets took to the air in 12 MIG-21s, the Israelis reportedly shot down four planes in a matter of minutes. Some say that there was almost as much celebrating over this event in Cairo as there was in Tel Aviv, as officers' messes jubilantly offered toast after toast to the "gallant professionalism of the Soviet fighting man." "You'd think they had won a battle," a Russian air force advisor was quoted as grumbling bitterly.[45]

Soviet Rudeness and Lack of Courtesy. This catalog of problems between the Egyptians and their Soviet advisors such as the indignation over control of bases, the friction between the advisor and advisee, and the slow delivery of Russian military equipment were seriously exacerbated by the poor personal relationship with the Soviets. On the surface the Egyptian people seemed to tolerate the Russians, or at least the government's public opinion polls indicated such, but Egyptian frustration was further aggravated in 1970.[46] The military friction which had existed since the 1967 defeat was slowly making itself known to the man in the street. Encouraged by the turbulent transition atmosphere following the death of Nasser, more and more stories of gauche Soviet military behavior began to surface.

General Mohammed Sadeq, the Egyptian Commander in Chief and War Minister, was known to be highly critical of Soviet personnel behavior in private talks to Egyptian officers. What made his attitude even more critical to this issue was his enormous popularity with the young Egyptian officers. For some time he had been recognized as a leading force in pressuring the government to expel the Russians. For the Soviets the animosity was mutual as they worked hard to have him relieved of command. It was an unhealthy situation with little prospect for mutual trust and cooperation as the disagreements continued. In order to cope with advisor problems in a professional manner, Sadeq had established a so-called "Court of Honor" system to deal with problems between the Egyptian military and their advisors. Rising tensions early in 1972 caused these court of honor incidents to increase from a relative handful to an average of 80 cases a month. This is a

clear indication that the advisory role was causing much unrest and bad feeling in the army.[47] There were also some reported military incidents such as scattered unit mutinies on the Canal and arrests of some air force officers at Beni Suef air base. These were tense times as there was also an alleged incident of an officer making an anti-Soviet speech to the assembled faithful at Cairo's al Huseini Mosque urging the military to take charge of its own destiny and start a Jihad.[48]

As time went on the difficulties between Sadeq and the Russians were compounded by Egyptian internal politics and eventually, despite his popularity, Sadeq was replaced by the Naval Commander, Ahmad Ismail Ali. This change, however, did not quiet the military pressure for a change in the Soviet relationship. After Sadeq's departure, the Egyptian Army Chief of Staff, Lt. Gen. Saad al Din Shadhili, continued to receive reports of Soviet rudeness. At one banquet a Soviet general was feeling the effect of heavy drinking and, during after dinner remarks, called Egypt an "unfaithful paramour." General Shadhili demanded and obtained the recall of this officer.[49] It is obvious that such tactless behavior and comments could understandably cause much difficulty in personal relationships.

There were numerous other occasions in which the Soviets put their foot in their mouths and made what was perceived as insults against Egypt. For instance, in addressing General Shadhili and other senior Egyptian officers, the senior Soviet military advisor made what was considered to be an openly contemptuous remark. He reportedly said, "you are like a man with two wives and do not know which one to choose."[50] This was immediately received as a negative reflection on Egyptian manhood and the advisor was also sent packing after intense pressure from Shadhili.

Considering the number of such insensitive remarks, it appears that the Russians were unable to understand the cultural importance of self-respect and honor to the Arabs. One reason for their inflexibility may lie in Russian culture and that peculiar mindset which President Saddam Hussein of Iraq once called the "Siberian mentality."[51] At times even Radio Moscow did its best to undermine efforts to cooperate with the Egyptians. After the Six Day War, a Soviet broadcast in Arabic, no less entitled "Reasons for the Arab Defeat," attributed the collapse of the Egyptian Army to a backward social structure.[52] Various military writers also climbed on the bandwagon and wrote scathing attacks on the Egyptian Army's professional shortcomings with statements like, "their officer businessmen who were more concerned with business than combat training of soldiers and NCO's."[53]

The Soviet Lesson. The Russian failure in Egypt brought to an end their largest and most far reaching foreign military involvement since World War II and prior to Afghanistan. There can be no doubt that many of the problems were caused by cultural conflicts and failures by the Russians to understand

the Arab psychology. In retrospect, it seems as if the Russians deliberately tried to cultivate a poor image in Egypt with their haughty treatment of the military and their measured distribution of military supplies and equipment. It is understandable how the Egyptians came to feel they were being used. In hindsight, it is no wonder that thousands of hysterical Egyptians poured into the streets to celebrate the Soviet ouster as an assertion of national pride and identity. While one might reason that these problems could have been avoided, more pertinent to the United States is some degree of assurance that it does not commit similar type errors in judgment in its military air program to Egypt. This not only applies to the internal management of such a program but also to the broader US foreign policy efforts in the Middle East.

Notes

1. The examples of Soviet involvement described in this text, some of which were handled ineptly—others not—were not all the result of the officers and diplomats on station. Some events were created by decisions from Moscow and, to some degree, defined and carried out by those on scene. Although it is beyond the scope of this paper to explore the fuller implications of this factor, this kind of experience should be noted.

2. Mohammed Heikal, *The Sphinx and the Commissar* (New York: Harper and Row, 1978), p. 59.

3. Anouar Abdel Malek, *Egypt: Military Society* (New York: Random House, 1968), p. 103.

4. Jon D. Glassman, *Arms for the Arabs* (Baltimore: Johns Hopkins University Press, 1975), p. 18.

5. Interview with Egyptian Navy Officers, Newport, 7 May 1981. Statements from Egyptian officers in general indicate that early opinion of the Soviet support was quite good.

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25. Sadat, p. 230.

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30. Paul Wohl, "Soviet Tactlessness—How Big a Part in Egyptian Rift?" *The Christian Science Monitor*, 20 July 1972, p. 2.

31. Interview with Egyptian Navy Officers.

32. Hijazi, p. 1.

33. William Beecher "Watch on the Suez," *Army*, November 1971, p. 11, quotes a well informed source in Cairo that the Russians had ten advisors in most battalions with two in the HQ and two in each of the four companies. Egyptian Officers also stated that the Russian advisors on each patrol boat were permanently on board with the advisor living in a cabin adjacent to the CO's.
34. Interview with Trevor N. Dupuy, President of Historical Evaluation and Research Organization, Dunn Loring, Virginia, 15 May 1981.
35. "Egypt, Everybody Out," p. 35.
36. Beecher, p. 10.
37. Rubinstein, p. 195.
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43. Ellis, p. 2.
44. Personal observations of author while serving with UNTSO forces in Israel.
45. Beecher, p. 10, relates the well known story as well as Laqueur and others, including several Egyptian officers for whom this story "typified" their relationship with the Russians.
46. Heikal, *The Sphinx and the Commissar*, p. 213.
47. Wohl, p. 2.
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Ψ

"A soldier should be sworn to the patient endurance of hardships, like the ancient knights; and it is not the least of these necessary hardships to have to serve with sailors."

Field Marshal Montgomery

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Law of the Sea—What Now?

Jon L. Jacobson

On 30 April 1982, following nearly fifteen years of preparations and formal deliberations, The Third United Nations Conference on the Law of the Sea (UNCLOS III) finally adopted a new, comprehensive treaty on the Law of the Sea. The vote was 130 nations in favor, 4 opposed, and 17 abstentions. The United States cast one of the four negative votes.

On 10 December 1982, the new treaty, officially known as the 1982 Convention on the Law of the Sea,[1] was opened for signature in Montego Bay, Jamaica. On that first day (of a two-year signature period), 117 nations signed. Signers included most of the Third World, several Western European countries, and the Soviet bloc.

The United States refused to sign. So did 23 or so other nations, but the United States was the only nation to announce that it would never sign or ratify or otherwise participate in the treaty. Japan and several other countries have since signed, although ratifications (the formal indications of intent to be bound by the treaty) have been slow in coming.

The United States' objections to the 1982 Convention are leveled solely at the treaty provisions that would establish and define an International Seabed Authority to oversee mining of the deep seabed beyond national jurisdiction. Yet—as President Reagan conceded in his 9 July 1982 statement rejecting the treaty[2]—the non-seabed portions of the treaty are more than acceptable to the United States. In fact, its provisions on transit passage through international straits and on preservation of navigation and overflight freedoms within 200-mile offshore zones are quite favorable to the United States as a global naval power.

So the question arises: is the United States, in rejecting the treaty, tossing out the baby with the bathwater, or, in this case, throwing out the sea with the seabed? The answer to that question, and to the question of where we go from here, might be assisted by an initial inquiry: how did we get into this situation? And to approach this question, we need to examine recent trends in the international law of the sea and some of the causes for these trends.

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The crucial date is 1945. For approximately 300 years prior to 1945, the world ocean was considered (at least by the dominant Western colonial powers) to be divided into basically two zones: (1) The vast majority of the ocean was deemed *high seas*, where "freedom of the seas" reigned. That is, the high seas were not subjectable to any nation's sovereignty. Each nation was free to use the world ocean for vessel (and, in this century, aircraft) navigation and its "inexhaustible" resources (usually fish) without interference or regulation by any other nation. (2) The other zone of ocean space was the *territorial sea*, a narrow border of ocean along the shores of each coastal nation within which that nation could exercise a sovereignty almost as absolute as it exercised over its land territory and its internal waters. The only real exception to absolute sovereignty was the right of every other nation's surface vessels to "innocent passage" through the territorial sea. Passage was "innocent" so long as it was not prejudicial to the peace, good order, or security of the coastal nation. Until nearly the mid-20th century, moreover, the maximum allowable breadth of the territorial sea was generally considered to be three nautical miles, as a matter of customary international law.

"For the officers on the bridges and in the cockpits, the present and future uncertainties concerning the military uses of the seas will translate into somewhat greater risk of challenge and confrontation in disputed straits, archipelagic waters, and exclusive economic zones."

This two-zone concept—combining an almost unimaginably large area of free-navigation space with narrow areas of innocent passage space—was, of course, a very convenient setup for any naval or maritime power. So thought the United States in 1945 as it emerged from World War II as the global naval power. Unfortunately for the United States and other maritime nations, 1945 is the year that the old two-zone setup began to change: the fingers of coastal nation sovereignty began to reach seaward. What happened to cause this new development?

The first thing that happened was that President Truman issued two proclamations that had been in the works since the early presidential years of Franklin Roosevelt. The first Truman Proclamation[3] claimed for the United States sovereign rights to the natural resources of the continental shelves adjacent to US shores. This meant that the United States was staking a unilateral claim to valuable resources, oil and gas in particular, beyond its three-mile territorial sea out to an average distance from shore of 40-50 miles. The second Proclamation,[4] issued the same day in September of 1945, seemed to assert US regulatory authority over fisheries in the high seas beyond the US territorial sea; actually it did not do so, but what was

important was the perception by others of yet another unilateral extraterritorial claim. Both Truman proclamations made a special point of reaffirming freedom of high seas navigation in the waters beyond the three-mile limit.

The international response to the claims of the 1945 Truman proclamations, especially to the continental shelf claim was extremely favorable: coastal nations thought it a good idea, and many followed suit. Others, apparently reasoning that there is no good idea that cannot be made better, asserted broader and more inclusive jurisdictions over sea and seabed areas off their shores. In 1947, Chile made the first claim to a 200-mile resource zone—principally to protect the Chilean whaling industry. Also in 1947, Peru asserted what is now viewed as a 200-mile *territorial sea*. Other Latin American countries followed the lead of Chile and Peru, claiming either 200-mile resource zones or territorial seas out to 200 miles from shore. Meanwhile, twelve-mile territorial seas and extraterritorial fishing zones were becoming increasingly popular around the globe.

In the midst of this expansionist trend, in the mid-1950s, the UN's International Law Commission—a group of international law specialists charged with the codification and progressive development of international law—began preparing draft treaties on the law of the sea. The result: the First United Nations Conference on the Law of the Sea (UNCLOS I), held in Geneva in 1958. The Conference adopted four new treaties, widely viewed at the time as "codifications" or restatements of the customary law of the sea. Figure 1 presents a profile view of the basic jurisdictional scheme drawn by that package of treaties. The United States is a party to each of the Geneva Conventions of the Law of the Sea. Certain aspects of these treaties are significant to the present discussion.

The *Territorial Sea and Contiguous Zone Convention*[5] reaffirmed the concept that coastal nations have sovereignty over their territorial seas, subject to the innocent passage doctrine. Passage of foreign submarines, however, is not "innocent" unless the submarine is on the surface and flying its flag. Furthermore, passage of aircraft over the territorial sea is never considered innocent passage. Thus, special permission from the territorial sea sovereign is required for overflight or submerged passage.

The delegations to UNCLOS I were unable to agree on a maximum breadth for the territorial sea. Naval and maritime powers preferred a narrow, three-nautical-mile limit in order to allow the greatest degree of mobility for vessels and aircraft on, under and over the ocean. Coastal nations, emphasizing offshore resource management, preferred broader limits. The impasse in 1958 led to the Second UN Conference on the Law of the Sea (UNCLOS II), which met in Geneva in 1960. Again, the delegations failed, albeit narrowly, to agree on a maximum breadth for the territorial sea. The 1958 Convention on the Territorial Sea and Contiguous Zone[6] avoids the maximum breadth issue, saying nothing at all about it.[7]

The *High Seas Convention*,[8] another of the four treaties adopted in Geneva in 1958, spelled out the "freedoms of the high seas." After defining "high seas" essentially as all waters seaward of the territorial sea, the High Seas Convention lists four specific high seas freedoms: (1) freedom of vessel navigation (including submerged navigation); (2) freedom of overflight; (3) freedom to fish; and (4) freedom to lay submarine cables and pipelines. The High Seas Convention makes it clear, however, that international law might recognize other high seas freedoms in addition to the listed four. The best candidate in 1958 for a "fifth freedom" was the freedom of scientific research. The High Seas Convention also contains several rules on such matters as flag-state jurisdiction, piracy, etc.

The *Continental Shelf Convention*[9] codified the principle sparked by the first Truman Proclamation in 1945, that coastal nations had sovereign rights over the natural resources of their adjacent continental shelves.[10] However, this treaty also reaffirmed that the waters above the continental shelves would not be affected and, therefore, such freedoms as navigation and overflight continued to exist in high seas above the continental shelves.

The fourth 1958 Geneva Convention on the Law of the Sea was the *Convention on Fishing and Conservation of the Living Resources of the High Seas*,[11] or the Fishing Convention. This treaty was designed both to preserve important high seas freedoms and to respond to at least a part of the concern of many coastal nations about foreign fishing outside their territorial seas. It provided that, under carefully delineated circumstances, a coastal nation could unilaterally adopt temporary, nondiscriminatory conservation regulations for endangered fisheries in adjacent areas of the high seas, pending agreed-upon or arbitrated international conservation rules. Although this treaty was not exactly a failure—it was adopted in Geneva by a two-thirds majority and did receive enough ratifications to enter into force for those who ratified—it was never a success. First of all, the major distant-water fishing nations, such as Japan and the Soviet Union, never became parties and were thus never bound. Second, the Fishing Convention did not really respond well to all the reasons for the trend toward broader coastal nation jurisdiction.

Through clear hindsight, we can now see that UNCLOS I and II were, in many respects, nonsuccesses. The failure of UNCLOS II to establish a maximum breadth for the territorial sea was indicative of the more general failure of the International Law Commission and the two conferences to consider the significance and staying power of the trend toward coastal nation expansionism. The 1958 treaties were, as it turned out, too backward-looking.

In the 1960s and '70s, despite the existence of the Geneva Conventions, the trend favoring broader coastal nation jurisdiction continued, and pressures for a new oceanic order mounted. The sources of these pressures are several:

- New ocean technologies have meant that more people have been engaged in more new and different activities farther from shore—e.g., drilling for oil and gas; fishing in large modern fleets thousands of miles from home and, significantly, very close to the shores of other nations; transporting huge quantities of crude oil in enormous, thin-skinned tankers that only roughly resemble traditional ships. These new-technology-supported activities have caused coastal nations to become more aware of the opportunities, controversies, and dangers that were developing in their offshore waters.
- Who were these coastal nations? In the wake of global decolonization, they were, more and more frequently, new nations, part of the "population boom" in the Global Village. They were nations basically poor, with sea boundaries but no great global navies, merchant fleets, or distant-water fishing fleets. They were, and are, nations of the Third World.
- These nations have been participants in the quest for a *New International Economic Order* (NIEO), which seeks a redistribution of resources and wealth on the planet. This search for a NIEO found coastal nation expansionism—especially the claims by poor nations to nearby ocean resources and uses that otherwise might be grabbed by the few technologically rich nations—to be consistent with NIEO goals.
- The mid-1960s revelation that the manganese nodules of the deep seabed contained such valuable minerals as nickel, cobalt, and copper—together with the growing technological capability for their commercial recovery—provided the final incentive for a new approach to the international law of the sea. The miners needed a security-of-tenure system as a prerequisite to profitable mining, and the Third World nations saw an opportunity for an equitable allocation of a new source of wealth.

The call for a new United Nations Conference on the Law of the Sea—the third conference—came in the late 1960s and was triggered by a series of General Assembly resolutions and declarations. These proclaimed the deep seabed beyond nation jurisdiction as "the common heritage of mankind,"[12] purported to establish a moratorium on seabed mining while a new international conference established a mining regime,[13] and set 1973 as the target year for the new conference to begin.[14]

The conference, UNCLOS III, did begin in December 1973, after several years of preparatory meetings of a special UN Seabed Committee, and finally adopted its new treaty in April 1982.

It has been something to behold! UNCLOS III can justifiably lay claim to having been the most significant attempt at truly global cooperation ever. Its task was awesome. Three numbers—150, 85, and 70—set the challenge: more than 150 nations (virtually the entire world community) gathered together to address 85 agenda items,[15] with a view to negotiating a comprehensive set of legal principles to govern nearly every aspect of use of 70 percent of the

planet's surface. Perhaps most astounding of all, the entire set of 85 issues had to be negotiated as a package.

The outcome: a comprehensive, very complex treaty of 440 provisions, covering 200 single-spaced pages, resulting—until the April 1982 adoption of the final text—entirely from consensus. Not a single vote was taken until the vote on the adoption of the treaty as a whole. (Whether the new treaty ever becomes binding international law or not, students of international politics and diplomacy will be studying UNCLOS III's process for decades.)

Figure 2 shows a cross-section of the new oceanic order embodied in the 1982 Convention of the Law of the Sea. A comparison of this figure with Figure 1 will demonstrate that the most striking development in the past 25 years has been the recognition of vastly extended coastal-nation competence to regulate and affect ocean activities in broad offshore zones.

The *Exclusive Economic Zone* (EEZ)[16] is a new concept, based on the original Latin American 200-mile claims. Within its EEZ, each coastal country has, in the phrase of the new treaty, "sovereign rights" over all resources, living and mineral. It is also allowed extensive jurisdictional authority over scientific research and is granted certain controls over marine pollution. The EEZ extends beyond the territorial sea to a maximum of 200 nautical miles from shore. Since most islands, as well as the continents, can form the bases for EEZs, worldwide EEZs will blanket about forty percent of the world ocean.

But, given the proper geological circumstances, a coastal nation's resource jurisdiction can extend even further seaward: the new treaty's legal definition of *continental shelf*[17] covers the entire geological continental *margin* (with some extreme outer limits), which means that some nations will have jurisdiction over natural resources of the seabed one hundred or more miles beyond the outer edge of the EEZ. However, the 1982 Convention also explicitly guarantees freedom of navigation and overflight within EEZs and in the waters above the "continental shelf."

Unlike the 1958 Convention on the Territorial Sea and the Contiguous Zone, the UNCLOS III treaty does set a maximum breadth for the *territorial sea*:[18] twelve nautical miles. Within this zone, innocent passage (defined at considerable length in the new treaty) by foreign vessels is allowed. Again, as in 1958, submerged passage and overflight are noninnocent. The impact on maritime nations of these rules is crucial. Universal recognition of twelve-mile territorial seas would mean that more than 100 straits—several of them such vital chokepoints as Gibraltar and Malacca—will be subject to the innocent passage regime; submarines would be required to surface and show their flags and aircraft could not overfly without permission of at least one of the states bordering the strait. The 1982 treaty, however, recognizes important exceptional *rules for straits*,[19] including Gibraltar and Malacca, that are "used for international navigation." For these straits, the treaty would establish transit passage rights for foreign traffic. These rights, which the

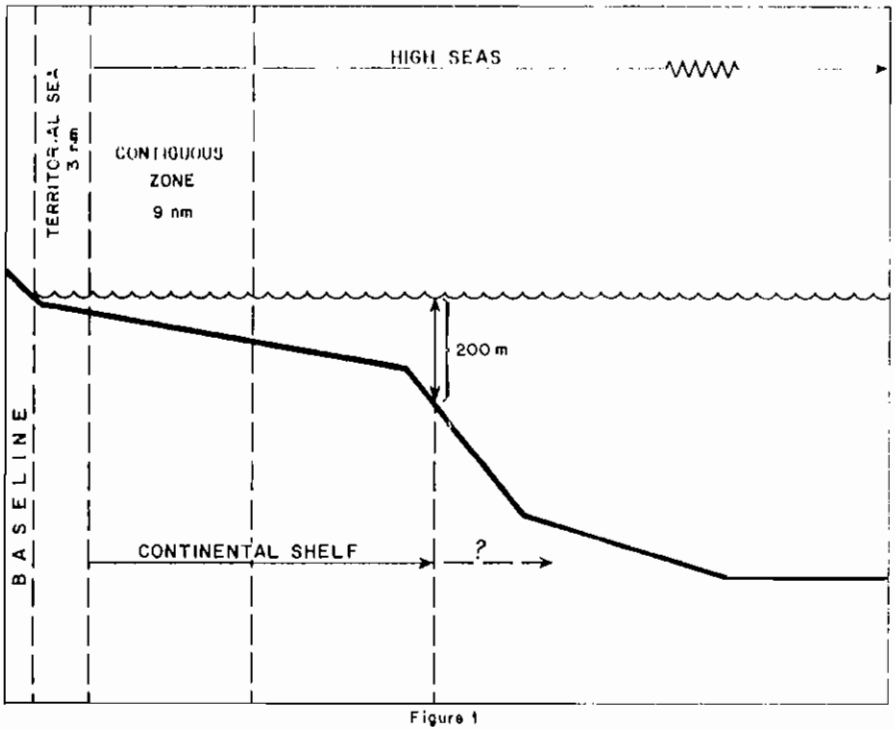

Figure 1

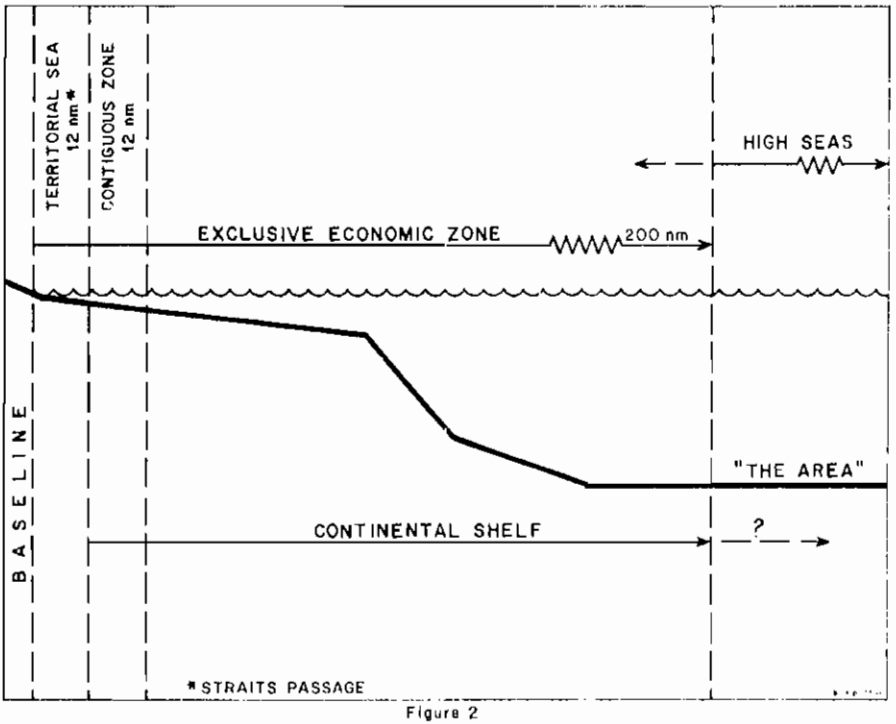

Figure 2

treaty balances against the interests of the strait-bordering nations, would include the right of submerged transit and of overflight.

A similar accommodation of international and local interests was accomplished by UNCLOS III for archipelago nations. These states, composed entirely of island groupings, prefer to draw baselines around the outer edges of their outermost islands and claim the waters thus enclosed as internal waters. The 1982 Convention creates the concept of *archipelagic waters*[20] for these areas. The archipelagic state will have sovereignty over its enclosed waters, but foreign vessels and aircraft will be allowed transit rights (termed the "right of archipelagic sealanes passage") nearly identical to the rights of transit passage through straits used for international navigation.

The *high seas*, shrunken in the 1982 treaty to a mere 60 percent of its early 20th-century existence, continues to exhibit its traditional characteristics—at least in the water column above the seafloor. Beyond the territorial sea, beyond the EEZ, beyond the legally defined continental shelf and beneath the planet's deep waters, lies *The Area.*[21] This is the deep seabed beyond national jurisdiction, the vast submerged realm that, according to the 1982 Convention of the Law of the Sea, is the "common heritage of mankind." The new treaty would establish a virtual government for this realm. It would be known as the International Sea-Bed Authority (ISA). Like many governments, the ISA would be composed of a sort of legislative branch (the one-nation-one-vote-Assembly), an executive branch (the Council, with weighted representation), a judicial branch (the Sea-Bed Chamber of the International Tribunal for the Law of the Sea), and a bureaucracy. The ISA would also include a controversial operating arm to be known as "the Enterprise."

The primary purpose of the ISA, as envisioned early in the Conference, would be management of manganese-nodule mining on the deep seabed. The ISA would grant exploratory and production licenses to miners, collect royalties and other fees, and make disbursements of revenue to the poorer members of the world community, in accordance with the common-heritage principle.[22]

When President Reagan announced his decision to reject the 1982 Convention, he cited as the reasons for rejection only aspects of the treaty that dealt with the ISA and deep seabed mining. The significant reasons for rejection include the following:

- Access to seabed minerals by private mining companies of the United States and other industrialized countries would be hampered by the treaty's so-called "parallel system." Each private applicant would be required to submit two mine sites of similar value. The ISA would be allowed to choose one of the two sites for its "bank" and could allow the private applicant to mine the other site. The "banked" mine site would be available for mining by

the ISA's operating arm, the Enterprise, or by a developing country. The US miners and the Reagan administration thus viewed the Enterprise, with some justification, as a favored competitor in the fledgling seabed business.

- To ensure that the Enterprise and any developing-nation miners have the necessary technology for mining their shares of the seabed, the 1982 Convention would require that private applicants, who have spent years developing seabed technology sell their know-how to the ISA on fair terms. This mandatory transfer-of-technology provision is especially irksome to the Reagan people.
- Another galling requirement in the seabed part of the new treaty concerns financing the Enterprise's operations. Obviously, even with a promising mine site and equipped with seabed technology, the Enterprise will not be able to conduct mining operations without sufficient financial backing to cover the enormous costs involved (now estimated to be nearly two billion dollars per mine site). The new treaty would require that the richer, industrialized nations provide loans on easy terms, with each lending nation's obligations proportional to its share of the UN budget. Thus, the United States' loan share, at 25 percent, would be the highest if the United States were to become a party to the treaty.
- The 1982 Convention also places production ceilings on seabed minerals, another feature the Reagan administration found objectionable. The limits were placed in the treaty at the instigation of those countries, mostly of the Third World, who are currently producing the same minerals from land-based sources and who thus feel threatened by the prospective seabed competition. As it turned out, the negotiations led to very high production limits that do not pose serious restrictions on seabed miners; nevertheless, the United States objects in principle to production ceilings.
- Another cited reason for US rejection of the UNCLOS III treaty was the failure to guarantee to the United States a seat on the ISA's Council. This was especially irritating in light of the treaty's guarantee of three Council seats to states from "the Eastern European (Socialist) region," all of whom would probably be controlled by the Soviet Union. Actually, a last-minute change in the draft treaty led to a provision that now guarantees a Council seat to the "the largest consumer [of seabed minerals]," a phrase understood to refer euphemistically to the United States.
- One of the most serious US objections to the 1982 treaty concerns amendment of the seabed mining provisions. The treaty provides for a Review Conference 15 years after the start of commercial operations, and a three-fourths majority vote can eventually be used to change the structure of the seabed regime. Since the seabed regime could thereby be amended without US concurrence, much less with Senate advice and consent, the procedure raises US constitutional questions in addition to international political questions. A US fear is that these amendment procedures will be

used in the future to change the "parallel system"—in which private miners are granted some access to seabed minerals—to an ISA-Enterprise monopoly dominated by Third World interests. Although other analysts argue that this fear is exaggerated or unwarranted, it remains a primary basis for US rejection of the treaty.[23]

At base, the Reagan rejection of the 1982 Convention on the Law of the Sea rests on ideological underpinnings, principally a fervent belief in the free market system. It is felt, with clear justification, that the deep seabed provisions of the new treaty not only fail to uphold the free-enterprise philosophy in its rules for the seabed mining industry, but are also part of a general Third World, NEIO-inspired attack on that philosophy.[24]

This list of principal US objections to the new treaty—if viewed in isolation from the rest of the treaty—clearly demonstrates to many, even most Americans, that the treaty is indeed flawed in light of US seabed interests. If, however, the treaty is so flawed, so objectionable from a US perspective, we should ask the obvious next question: how did we get into this mess? The United States has not been standing on the Conference sidelines, gaping in horror as the eventual treaty materialized. We have been a primary "mover and shaker" in UNCLOS III. What were we doing all this time?

To a large extent, we have been busy creating the very treaty we now reject. Let's look at the US record during the emergence of the new law of the sea picture.[25]

1945—The Truman proclamations on the continental shelf and on fisheries (conceived in pre-WWII days but issued at the beginning of US tenure as a global naval superpower) instigate, or at least accelerate, coastal nation expansionism.

Mid-1960s—The trend toward seaward expansionism of coastal-state sovereignty and jurisdiction so concerns the United States as a global ocean power that it enters into discussions with the other global naval power—the USSR—on what to do about the impending threat to free navigation, especially through straits. The two superpowers determine that international agreement with coastal nations is the best means to approach the problem. Offshore fisheries jurisdiction was to be the trade-off for coastal nations. However, the interest in deep seabed minerals enters the picture as a new bargaining chip.

1970—President Richard Nixon presents a detailed proposal for an International Sea-Bed Resource Authority, based on the "common heritage" concept. The Nixon proposal is such a generous concession to landlocked and Third World states that, had it been accepted and adopted outright, it would have been considerably more objectionable to the current US administration.[26] In

any case, the proposal is rejected by the Third World nations, largely because it is a US proposal. Again, the United States is willing at this time to make such a large concession in the interest of preserving unrestricted rights of vessel navigation and overflight in the face of expanding jurisdictional claims by coastal nations. Although the Nixon proposal is rejected, it thereafter provides the framework for negotiations on a seabed mining regime.

1976—By now, UNCLOS III is well under way. Favorable navigation and overflight rights, including straits passage rights for aircraft and submerged submarines, are part of the package thus far negotiated, but the Conference is bogged down on the deep seabed mining regime. Basically, the nations representing private miners—the United States and a few other industrialized states—want relatively unrestricted access to seabed minerals by private miners. The Group of 77, a bloc of about 120 nations of the Third World, prefers a new International Sea-Bed Authority that would *itself* mine the seabed. A third, but overlapping group—producers of minerals from land-based sources—want the treaty to protect them from competition from seabed minerals.

Enter Henry Kissinger, US Secretary of State, who wants the Conference to move through its seabed-regime impasse and adopt a new treaty so that the United States can feel more secure about its crucial national security interest in wide freedoms of navigation and overflight. Here is what Secretary Kissinger proposes in 1976 at UNCLOS III:

- A "parallel" system of mining, whereby private-miner applicants would present two substantially idenrical mine sires to the International Seabed Authority. The ISA would keep one for itself, to be mined by its operating arm "the Enterprise" or by a developing country.
- The Enterprise would be financed by loans, with easy terms, from the industrialized countries.
- The developed, industrialized countries and their private miners would be encouraged to transfer the necessary technology to the Enterprise and developing-state miners.
- Production limits would be set on behalf of those states whose land-based miners would suffer competition from the production of seabed minerals.
- Periodic review conferences should be held to amend the seabed mining regime as necessary or appropriate.

1976—(a big year)—over the objections of the United States UNCLOS III negotiators, the US Congress finally adopts its own 200-mile zone—limited to fisheries management jurisdiction.[27] This is quickly followed by the proclamation of a similar Soviet zone and, after a time, by a Japanese 200-mile zone. Many other nations also follow suit, thereby solidifying the 200-mile zone concept as a *fait accompli* of customary international law[28] and depriving the US UNCLOS III negotiators of an important bargaining chip.

1980—Congress again steps in, this time with the acquiescence of the US negotiators, and passes the Deep Seabed Hard Mineral Resources Act.[29] This

law purports to be interim legislation designed to license US miners to mine the deep seabed and to encourage other mining countries (such as Japan, the United Kingdom, West Germany, Belgium, the Netherlands, and Italy) to do the same and to reciprocate, pending adoption of an UNCLOS treaty. Our negotiators acquiesce because the Conference is again deadlocked and it is felt that the congressional initiative will get it moving again. It does, and consensus agreement on virtually all aspects is achieved in the Conference's 1980 Geneva session. One more session in early 1981 is all that is needed to wrap up the few remaining details.

January 1981—The presidential administration of Ronald Reagan comes to Washington. At the instigation of the new president's UNCLOS appointees, the Conference is put on hold while the draft treaty is subjected to a year-long policy review. When the United States returns to the bargaining table in early 1982, its demands that substantive parts of the already-negotiated package be reopened and its perceived unwillingness to bend on hardly any point lead to the adoption of the new treaty over US objections and its negative vote.[30]

Thus it is clear that US actions have been, in large measure, responsible for the new shape of the international law of the sea, and for the structure of the 1982 Convention as well. Many of the now-objectionable parts of the new treaty began as concessions by US negotiators, who, until 1981, were primarily concerned with the adverse national security implications inherent in the perceived global trend toward inhibiting freedom of ocean navigation and overflight.

The United States does indeed have a national interest in access to seabed minerals; it also has an important interest in preserving freedoms of the high seas in as broad an area as possible. In fact, the United States has important national interests in virtually every aspect of ocean use. It is not only a major maritime power, but it is also one of the most important coastal nations and thus shares with all coastal nations the interests and concerns regarding use of the seas off its coasts. A scorecard that lists all US interests in the seas, one that does not focus on the deep seabed regime to the virtual exclusion of other ocean interests, shows that the United States would not fare badly at all as a party to the 1982 treaty:

- Living and nonliving resources off US coasts are vast and valuable. The new treaty's EEZ would confirm US sovereign rights to those resources in the largest EEZ space, more than 2.2 million square nautical miles, assigned to any single nation. (The recent Presidential Proclamation of a US EEZ attempts to lay claim to these resources unilaterally,[31] but other nations assert that the United States cannot claim the benefits of the new treaty without becoming a treaty party and recognizing the negotiated concessions.)

- Significant environmental protections are granted by the new treaty to coastal nations, and the United States, as a major port state and importer of shipborne oil, could benefit a great deal from these.
- Freedom of navigation and overflight is, for all practical purposes, guaranteed beyond twelve miles everywhere, and rights of passage through international straits, including submerged passage and overflight, are allowed even within twelve-mile territorial seas. Similar passage rights are also allowed through archipelagic sea lanes.
- Freedom of scientific research, clearly in the US national interest, is seriously impeded within EEZs under the 1982 treaty's provisions. Our oceanographers, however, generally prefer the treaty to the alternative, which they rightly feel will soon be (or is now) a customary law of absolute exclusion.[32]
- Dispute settlement mechanisms for nearly all types of future ocean controversies are part of the 1982 treaty, largely due to US efforts. Even the Soviet Union, for one of the first times in its negotiating history, went along with the consensus of the conference that most ocean law disputes should be submitted to compulsory dispute settlement before a special International Tribunal for the Law of the Sea, or the International Court of Justice, or an arbitration board.
- International legal stability would, of course, be enhanced by a successful, widely ratified Law of the Sea Treaty, and the United States, with the greatest interest in the many uses of the world ocean and as a traditional adherent to the rule of law, would benefit from such stability in ocean law.
- The deep seabed mining regime, the focus of current US objections to the treaty, *is* a minus on any US-interests scoreboard. All the reasons for rejecting *that regime* cited by the Reagan administration *are valid*. But one might question whether these reasons are sufficiently serious that they outweigh the clear advantages for the United States in the rest of the treaty. Those who still urge the United States to retract its rejection of the treaty point out that, because of inflation and the present and projected state of global metals markets, commercial seabed mining is not likely to occur until well into the next century. They also note that because of UNCLOS III's eleventh-hour adoption of a Pioneer Investors Protection Resolution (the PIP Resolution), US miners and those of the other industrialized countries would be likely to enjoy a virtual seabed mining monopoly under the new treaty for several decades.

Despite these arguments and others that emphasize the treaty's net benefits for the United States, it probably must be admitted that the United States is committed to nonparticipation in the treaty. Certainly the Reagan administration is adamant in its rejection. True, a future president could sign the 1982 treaty and submit it to the Senate for its advice and consent to ratification. But the Senate, which must approve by a two-thirds majority, is considered unlikely to consent to ratification.

So, where do we go from here? The United States still has the whole array of national interests and concerns regarding uses of the seas by us and by others. How do we protect those interests in the current state of confusion?

First, we should remind ourselves that the ocean-use problems that instigated UNCLOS III still exist and that international rules concerning uses of the sea also exist and will continue to develop, in one way or another. By rejecting the UNCLOS III treaty, the United States has simply rejected a previously selected means for controlling the rule-development.

Second, we should remember that rules of international law come about in essentially two ways: (1) By state practice—the national claims and responses to claims and the many other expressions of international practice that reflect relatively uniform recognition of proper norms for behavior of nation states—which is referred to as customary law. (2) By international agreement, or treaty, which creates contractual rules binding only on treaty parties. The international legal system recognizes no legislature but sometimes, as in the case of UNCLOS III, something like legislation is attempted through the device of a treaty or set of treaties. In these instances, broad consensus by those to be governed by the rules is obviously necessary for their effectiveness.

Because of its objections to the 1982 UNCLOS III treaty, the United States has determined to upset the broad consensus that had been developing in that Conference, to thus cause the new treaty to fail, and, presumably, to adopt a new strategy for controlling the development of ocean law rules. The thrusts of this new strategy appear to be twofold: (1) To influence or direct the present understanding of customary law and its future course. (2) To enter into discussions and negotiations with appropriate nations with a view toward achieving agreements or understandings favorable to US ocean interests. Let's briefly examine some aspects of these two approaches.

Control of customary law: The United States continues to assert that: The deep seabed beyond national jurisdiction is "free high seas" as a matter of customary international law; thus, deep seabed minerals are free for the taking by any nation which does not bind itself contractually to the 1982 treaty's deep seabed regime. (Third World nations, and some others, disagree, relying principally upon the UN General Assembly Resolutions declaring the deep seabed the "common heritage of mankind" and purporting to impose a ban on mining the seabed outside the international system now described in the new treaty.)

Freedom of navigation and overflight for all vessels and aircraft—including military vehicles and submerged submarines—is recognized by custom everywhere beyond the territorial sea, even within 200-mile zones. The United States will continue to assert this principle by words and deeds. On 10 March 1983, President Reagan proclaimed an Exclusive Economic

Zone for the United States and used the occasion also to proclaim, in no uncertain terms, the US view that customary international law—as reflected and articulated, but not created, in the 1982 treaty—includes the rule of freedom of navigation and overflight everywhere seaward of territorial seas.[33] (Some nations, exemplified by Brazil,[34] disagree.)

Rights of transit passage for submerged submarines and for aircraft through and over straits, even those blanketed by territorial seas, exist as a matter of historical practice, which customary law recognizes and which, again, is articulated but not established in the UNCLOS III treaty. (Many nations, and not just Third World countries, disagree.)

Similar rights of transit passage are recognized through and over the waters of archipelagic states. (Some nations disagree.)

Discussions and negotiations: While it tries to affect customary law trends, the United States will also continue to conduct talks and negotiations with other states regarding various American ocean interests.

As to deep seabed mining, the United States is not only attempting to ensure that the 1982 treaty fails, but that the mining nations enter into their own "mini-treaty" to establish a deep seabed mining regime more compatible with free enterprise precepts. Since several of these mining nations have signed (but not yet ratified) the 1982 Convention, chances for US success in this venture remain questionable.

As to the other major US ocean interest—navigation and overflight—the United States is trying to achieve understandings with such important straits states as Spain and Indonesia (also an archipelagic state) concerning US positions on customary law and on rights of passage.

Other US interests will be pursued along similar paths, although it appears likely that, for these interests, the United States will be careful to make sure its positions track the 1982 treaty's provisions as closely as possible. Thus, for example, the President's EEZ proclamation and its accompanying policy statement indicate that the United States will abide by assertions of jurisdiction over scientific research by other nations in the EEZs, if such jurisdictional claims comply with the "customary" rules articulated in the UNCLOS III treaty.[35]

What does all this confusion and maneuvering mean for the Navy? First of all, it should be apparent that "freedom of the high seas"—an international-law citadel that has stood for centuries—is under siege. In the absence of the 1982 treaty, or something like it, the 200-mile zone concept is likely to continue to evolve in directions that will impose further restrictions on navigation and overflight, and this will be especially true for military vessels and aircraft. The simple fact is that most nations are coastal nations who have no global navies and therefore no perceived interest in keeping their offshore

waters free for passage and military maneuvers by superpower forces. Indeed, the 200-mile "barrier" could soon be breached.

Passage through straits less than 24 miles wide (i.e., those covered by one or more nations' twelve-mile territorial seas) could be increasingly hampered by legal objections of the straits states and by others anxious to make sure that the United States, in remaining outside the 1982 treaty, is deprived of the "benefits" of the UNCLOS III package deal. Similar challenges could meet American attempts to exercise transit passage rights through and over archipelagic waters.

Second, the defense of the free-seas citadel could be costly in several ways. Costs of achieving understandings or agreements with other nations could be significant. For example, it is not unlikely that Spain will place US overtures regarding passage through the Strait of Gibraltar in a package with US concerns on Spain's relationship to Nato and the renegotiation of US bases agreements.

The United States could, of course, play the tough guy and simply go it alone—do what it wants to do anywhere in the ocean—without obtaining the consent of other affected and objecting nations. This approach, however, could be costly in several ways:

- It could mean incurring the ill will of allies, friends and nonaligneds.
- It would certainly further alienate Third World nations.
- It could precipitate an acceleration of the pendulum swing toward further coastal nation expansionism, making the job that much more difficult.
- It would mean taking military risks—for example, in challenging assertions of coastal-nation restrictions on offshore naval movement, or in protecting US seabed miners.
- There would certainly be legal challenges in the International Court of Justice.

The impact of these uncertainties will fall, in the first instance, on those charged with planning the movement of military ships and aircraft on, under, and over the sea. There will be added political and, perhaps, military risks in, e.g., sending aircraft or submerged submarines through straits bordered by one or more states that object to such passage on a legal ground or in carrying out maneuvers within 200 nautical miles of those coastal nations who might challenge freedom of navigation in their EEZs. While these risks will, in some cases, suggest that alternative routes or sea areas be selected, in other cases the planners might well decide to challenge the assertions of illegality by doing just the opposite: that is, by sending ships and aircraft into the disputed areas to prevent the perception of acquiescence in the claims of the coastal states.

For the officers on the bridges and in the cockpits, the present and future uncertainties concerning the military uses of the seas will translate into a somewhat greater risk of challenge and confrontation in disputed straits,

archipelagic waters, and EEZs. These officers, as representatives of the US Government, will be on the cutting edge of the further development of ocean law rules. Their missions should be carefully planned and executed so that, in concert with ongoing diplomatic efforts, their actions will help to ensure that the broadest possible freedom of ocean navigation and overflight will continue to be part of the fabric of the international law of the sea for decades to come.

Notes

1. United Nations Convention on the Law of the Sea, opened for signature at Montego Bay, Jamaica, on 10 December 1982, U.N. Doc. A/CONF. 62/122(1982) [hereinafter cited as 1982 Convention].

2. *Department of State Bulletin*, August 1982, p. 71.

3. Proclamation No. 2667, 10 Fed. Reg. 12,303 (1945).

4. Proclamation No. 2668, 10 Fed. Reg. 12,304 (1945).

5. Convention on the Territorial Sea and the Contiguous Zone, 29 April 1958, 15 U.S.T. 1606, T.I.A.S. No. 5639, 516 U.N.T.S. 205.

6. The "contiguous zone" to which the treaty's title refers is a zone of special jurisdiction beyond a coastal state's territorial sea. Article 24. In this zone, the coastal state is authorized to prevent and punish violations of its regulations concerning customs, immigrations, fiscal matters, and sanitary measures. The maximum limit for the contiguous zone is twelve nautical miles from shore.

7. The Territorial Sea and Contiguous Zone Convention also includes several complex provisions on establishing baselines from which the territorial sea and other zones are measured and rules for setting boundaries between the seas of opposite and adjacent states.

8. Convention on the High Seas, 29 April 1958, 13 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82.

9. Convention on the Continental Shelf, 29 April 1958, 15 U.S.T. 471, T.I.A.S. No. 5578, 499 U.N.T.S. 311.

10. See North Sea Continental Shelf Cases, [1969] I.C.J. 4, 23.

11. 29 April 1958, 17 U.S.T. 138, T.I.A.S. No. 5969, 559 U.N.T.S. 285.

12. G.A. Res. 2749, 25 U.N. GAOR Supp. (No. 28), at 24, U.N. Doc. A/8028 (1970).

13. G.A. Res. 2574D, 24 U.N. GAOR Snpp. (No. 30), at 11, U.N. Doc. A/7630 (1969).

14. G.A. Res. 2750C, 25 GAOR Supp. (No. 28), at 26, U.N. Doc. A/8028 (1970).

15. Although the official agenda of the Third Conference lists only 25 major items, the major items are further subdivided. The total number of items thus listed is approximately 85.

16. See arts. 55-75 of the 1982 Convention.

17. See arts. 76-85 of the 1982 Convention.

18. See arts. 2-32 of the 1982 Convention.

19. See arts. 34-45 of the 1982 Convention.

20. See arts. 46-54 of the 1982 Convention.

21. See arts. 133-191 of the 1982 Convention and Annexes III & IV.

22. The 1982 Convention, an extraordinarily complex document, also contains detailed provisions on several topics not mentioned in the text of the article—*e.g.*, marine pollution, scientific research at sea, the status of islands, marine mammals, access by landlocked nations, settlement of ocean disputes, etc.

23. The United States also charges that the common-heritage proceeds of seabed mining might be distributed to such objectionable recipients as the PLO and other national liberation groups.

24. The counterargument points out that US companies frequently put up with even more restrictive, antifree enterprise schemes in resource-extraction deals with Third World countries. See Katz, "A Method for Evaluating the Deep Seabed Mining Provisions of the Law of the Sea Treaty," *Yale J. World Pub. Order 114* (1980).

25. The historical record is set forth with great clarity in Ann L. Hollick, *United States Foreign Policy and the Law of the Sea* (Princeton, NJ, Princeton University Press, 1981).

26. For example, the Nixon proposal would have designated all seabed space seaward of the 200-*meter* isobath (depth line) as common heritage space. See Comment, "The Nixon Proposal for an International Seabed Authority," 50 *OR. L. REV.* 599 (1971).

27. Fishery Conservation and Management Act of 1976, 16 U.S.C. §1801-1802.

28. But arguably only for the common-core assertion of fisheries management jurisdiction.

29. 30 U.S.C. §1401-1473.

30. Leigh S. Ratiner, "The Law of the Sea: A Crossroads for American Foreign Policy," *Foreign Affairs*, Summer 1982, pp. 1006.

31. Proclamation 5030, 48 Fed. Reg. 10,605 (Mar. 14, 1983). A policy statement by the President accompanied the EEZ Proclamation and can be found in *Weekly Comp. Pres. Docs.*, 14 March 1983, p. 383.

32. See Wooster, "Research in Troubled Waters: U.S. Research Vessel Clearance Experience, 1972-1978, in Science, Technology, and Ocean Development," 9 *Ocean Dev. & Int'l L.* 219 (1981) (J. Jacobson, ed.).

33. See note 31.

34. Ambassador Thompson Flores of Brazil recently stated that, according to his country's interpretation, the 1982 Convention on the Law of the Sea "[does] not authorize other states to carry out military maneuvers within the exclusive economic zone, particularly when these activities involve the use of weapons or explosives, without the prior knowledge and consent of the coastal state."

35. See note 31.

USAF Academy Military History Symposium

The United States Air Force Academy's Department of History will sponsor the Eleventh Military History Symposium on 10-12 October 1984 and will address the topic "Military Planning in the Twentieth Century." The program includes examination of successes and failures in strategic military planning from an international perspective, but focuses on US planning efforts. Topics will range from the education and training of the military planner to the reconciliation of twentieth-century technological, managerial, and social changes with traditional military planning. Discussions will also include the experience of planners during the cold war and for limited warfare. For information concerning symposium registration, contact:

Captain Bernard E. Harvey, Executive Director
Eleventh Military History Symposium
Department of History
United States Air Force Academy
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Telephone: (303) 472-3230

The Trident Submarine in Bureaucratic Perspective

Larry Schweikart
D. Douglas Dalgleish

For several years in the mid-1970s it appeared the Trident submarine program might be the most controversial weapon ever built—it was subjected to widespread reports of "cost overruns," Navy criticisms of Electric Boat Company's construction errors, and threats to build the submarines in other countries. Such did not become a reality, partly because the MX missile absorbed much of the previous criticism of strategic weapons programs and partly because both the Navy and Electric Boat solved many of the problems plaguing the system. Most importantly, however, until the June 1982 retirement of P. Takis Veliotis—who, as general manager of Electric Boat, had fought the Navy as a whole and had clashed individually with Admiral Hyman Rickover, Vice Admiral Earl Fowler, and Secretary of the Navy John Lehman—a process of posturing by both the shipbuilder and the Navy had resulted in an apparently satisfactory working relationship. Veliotis and the Navy each admitted errors and responsibility for faults in the program.

"All things considered, the Trident is to the Polaris what the B1 bomber is to the B-36."

Throughout the controversy, and indeed throughout the submarine's history, the program has been compared to the Polaris program. Often, Polaris was held up as a model for Trident planners and budgeteers. This essay will focus on the Trident submarine in a bureaucratic perspective by specifically comparing and contrasting it with Polaris. Since the Polaris submarine and missile program has received considerable attention in both scholarly and nonscholarly works, it is our goal to highlight the Trident system and to show how it differed from Polaris. We have therefore divided

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the discussion into the two critical phases of Trident development and production: the first, 1967 to 1974, laid the groundwork for all the subsequent controversy; and the second, 1974 to 1982, saw the culmination of the problems built into the program at the outset, along with their recent apparent solutions.[1]

1967-1974

Designed as a replacement submarine for the Polaris-Poseidon submarine force that entered operations in the early 1960s, the Trident represented the quietest, fastest, and deadliest ballistic missile submarine (SSBN) in the world. When the Navy initiated purchases of long-lead items for the sub in 1972, the early designs of the vessel roughed out an awesome underwater strategic weapon. Although extensive design completion and modification occurred between the planning and the delivery of the *Ohio* (the first Trident) in November 1981, the finished boat was 560 feet in length and about 18,700 tons submerged displacement, making it the second largest submarine in the world behind the Soviet *Typhoon* at an estimated 25,000 tons. Each Trident's teardrop-shaped 42-foot-diameter pressure hull carries twenty-four Trident I missiles. Each has a range of four thousand nautical miles and enough nuclear warheads (a maximum of 192) for a magazine firing to lay waste to most of the industrialized regions of the Soviet Union, despite some attrition by Russian defensive systems. Besides the substantial increase over the previous class of US submarines in the number, range, and payload of the missiles, the Trident featured scores of technological advances in the fields of quieting techniques, active and passive defense, passive sonar, propulsion, automation, pressure-hull design, communication, operational endurance, navigation, simplified modular maintenance, and crew comfort. In short, it dwarfed all previous US strategic submarines in size and in sophistication of its equipment. To build such a mammoth hull, Electric Boat Company constructed an entirely new frame and cylinder facility at Quonset Point, Rhode Island, and thoroughly revamped its main assembly yard at Groton, Connecticut. Not only was the vessel to be new, but the entire construction process was revolutionized to handle the enormous construction demands posed by the hull size and the Navy's schedule.[2]

Trident emerged from a 1966-1967 study known as Strat-X, in which the Pentagon studied over 125 different missile-basing options in response to the likelihood that the USSR soon would deploy more powerful and accurate intercontinental ballistic missiles (ICBMs) in increasing numbers. Perhaps as a direct result of the experience with Polaris, the ground rules for the Strat-X study required that any suggested new platform be conceptually unique and not simply an upgrading of an existing launching system. Polaris itself had profited from being a straightforward modification of attack submarine designs, which gave it a significant design lead over systems that required

original work. A host of sea-based options were suggested in Strat-X, ultimately posing something of a problem for the winner—Trident, or ULMS (underwater long-range missile system)—in that each option initially was pursued as if it *would be* the winner. Considerable research went into these options. Thus, when Trident proved to be less than an engineering panacea, many observers tended to recall with a nostalgic affection the Polaris precedent and, hence, came to favor other options, forgetting that equivalent problems and complications would not be ruled out just by a preference for other untried alternatives. Polaris, on the other hand, competed with no other sea-based alternatives, except for a brief fling the Navy had with liquid-fueled rockets based on surface ships.[3]

During the development of Polaris, the Navy created the Special Projects Office (SPO), within which a small, cohesive group of advocates led by William Rayborn co-opted, incorporated, or otherwise aggrandized organizational power for Polaris. The major exception to SPO's cohesiveness was Vice Admiral Hyman Rickover, who through his position in the Naval Reactors Branch had supplied the Polaris class its nuclear reactors. Although unavoidably any reactor had to come from Rickover, Rayborn's group otherwise "froze" him out. With Trident, however, a completely different situation developed. By the late 1960s, Rickover had increased his personal and organizational power within the Navy to the extent that he could not be ignored and often could not be controlled. Yet, ironically, while he was responsible for the cost growth of Trident as much or more than any other individual, it was for reasons completely different from those normally pointed to by scholars, biographers, and critics of Rickover. Almost unanimously they have agreed that Rickover caused the Trident to be as large as it was by insisting on a huge reactor for its own sake. This conclusion is inaccurate insofar as it misses the crucial sizing factor already in place when the Navy submitted to Rickover requests for reactor designs: the height, diameter, and weight of the proposed D-5 (Trident II) missile. Even the early designs for this 6,000-mile missile showed it to weigh 60 tons and to be 42 feet in length by 7 feet in diameter. Admiral Isaac Kidd, Jr., former Chief of Navy Material, summarized the situation: "The missile sized the submarine."[4]

The other development that gave Rickover influence in the Trident program he had lacked in Polaris was a change in the strategic situation of the United States. During 1971, the Strategic Arms Limitations Talks (SALT-I) had resulted in an interim agreement of short duration. Chief of Naval Operations Admiral Elmo Zumwalt feared the Russians would use its expiration as an opportunity to press ahead with research and development that would dramatically endanger existing US ICBMs and offset the US technological lead in seaborne strategic systems. He therefore joined Rickover to present a united front to the nation's lawmakers, even though he had serious disagreements with Rickover about the size of the reactor and the

design of the ship. This alliance itself would not have subsequently been so crucial had it not given Rickover a hand in the general contract process.[5]

Since Polaris basically utilized existing attack submarine designs adapted to incorporate sixteen submarine-launched ballistic missiles (SLBMs) within a missile-launching section added amidships, Rickover had been unable to play any major role in the contracting process per se. Such contracts were therefore rather conventional, since radical new reactors were not required. This was not the case with Trident. Because the missile required a much larger hull and because Strat-X necessitated the development of new platforms, the Navy had to negotiate for a wholly new kind of contract specifically to build Tridents. Whereas the Department of Defense (DoD) in the fall of 1971 looked at alternatives advocating stretching out the hull life of existing SSBNs, Secretary Melvin Laird rejected these alternatives in favor of replacing the Polaris-Poseidon subs with Tridents and in favor of the rapidest Trident missile deployment possible. The Navy's judgment was that maintenance on the older submarines soon would make them inordinately expensive and perhaps less safe. Yet, it should be noted *all* options, whether they were life system extensions or Trident system replacements, were considered in light of using the C-4 (Trident I) missile—at the time itself still undeveloped—as a temporary measure until the Trident II would become available. Although Admiral Levering Smith of SPO had control over much of the design in the "Development Paper Concept 3b 10c," under which the outline of the Trident program was set, and although Rickover seemed to be sidelined during the 1971-74 period, the latter nevertheless was charged with designing a reactor capable of propelling a colossal hull carrying twenty-four Trident II missiles at high speeds. Still, Rickover's role was scarcely noticed until 1974, when the designs had been completed and the Navy was about to let the contract.[6]

Space does not permit a treatment of the debates in the Navy and in Congress whose resolution resulted in the final design. Considerable controversy surrounded the size and capabilities of the vessel, but critics often ended up contradicting themselves in trying to attack Trident: for example, whereas some argued that Trident would soon be made obsolete by Soviet ASW advances (thereby admitting that Soviet advances in ASW were real) other critics testified that Trident was unnecessary because the Soviets were well behind in ASW. Ultimately, both the size and capabilities of the submarine were decided by the missile and by considerations of cost effectiveness. Twenty-four missiles per sub were necessary to spread the cost of deploying an adequate number of warheads at sea.[7]

Where Rickover had his greatest impact was in advocating a fixed-price contract over a cost-plus type (straight incentive types were ruled out). Cost-plus contracting had proved common for most lead vessels, although the 617 (*Lafayette* class SSBN), the 637 (*Sturgeon* SSN), the 640 (*Benjamin*

Franklin SSBN), and the 688 (*Los Angeles* SSN), as well as two experimental subs, the 671 (*Narwal*) and the 685 (*Lipscomb*) all were built without cost-plus-incentive contracts. The key to building such a lead vessel without cost-plus contracts is to allow for subsequent submission of contractor claims, to hold out a real incentive of serial production, and to keep the technological advances relatively simple. However, in the case of the first Trident, the *Ohio*, nothing so radical since the *Nautilus* had been attempted, making cost-plus in this case the more reasonable form of contract. Rickover lobbied hard for a fixed-price contract, assuring Capitol Hill that the Trident was "bread and butter shipbuilding." His suspicion towards shipbuilders convinced him a cost-plus contract eventually would engulf the Navy in a sea of "unreasonable" claims. He won support from one Navy group, which also feared that the overall Navy shipbuilding budget for other classes of vessels might be lowered in order to accommodate the anticipated increased costs of the Trident. Admiral Isaac Kidd, Jr., and Rear Admiral Kenneth Woodfin, however, maintained just the opposite: "A cost-plus is the responsible and proper instrument to build a first-of-class ship. The lead Trident is no exception." Still, Woodfin admitted to being under great pressure to use fixed-price contracting.[8]

When the Navy asked two major shipbuilders to submit fixed-price bids to build the *Ohio*, neither responded. Newport News submitted a cost-plus bid, with a projected deadline for delivery in 1981, three years after the Navy's specified date. Electric Boat Company (EB) also submitted a cost-plus, but with the proper date. The Navy instructed EB to submit the bid in fixed-price form, but, while EB changed the date, it still negotiated for a cost-plus. Both the Navy and EB drew up cost estimates, with EB's estimate about $60 million more than that of the Navy. One Navy financial specialist agreed with EB's figures, calling them a more realistic target. After intensive negotiations, Electric Boat and the Navy produced a "marvelously inventive rubber document": a fixed-price with "rather liberal provisions." Woodfin called it "in *reality* a 'cost-type with a ceiling.'" Actually, the contract was so layered as to appear to have a fixed price but with incentives for time and performance at various plateaus. The Navy agreed to share many of the expenses beyond the target costs, however.[9]

Gordon Rule, civilian head of the Navy's Procurement Control and Clearance Division, an office responsible for reviewing contracts prior to their authorization, refused to clear the Trident contract. He claimed it had "built-in overrun" written all over it and was a "flagrant and unforgiveable example" of the Navy knowingly demanding "the wrong type of contract." Before long, Deputy Defense Secretary Bill Clements and Congressman Les Aspin were embroiled in the controversy. Clements approved the contract on 25 July 1974, and Aspin immediately attacked it as a "major screw-up." Contacting the General Accounting Office (GAO) through Charles Bennett,

head of the House Seapower Subcommittee, Aspin received word that Rule had opposed the contract. In fact, Rule sent a letter to Bennett with criticism "so blistering . . . Admiral Kidd forwarded it only with some anguish" under his own cover letter. Several other conflagrations ensued with the GAO pursuing the matter until February 1975, when GAO officials met with Bennett and some Navy representatives. During the meeting, Bennett reduced the question to a thumbs-up-or-down proposition, directed at GAO comptroller general Elmer Staats. Staats summarized his opinion by writing that he did not believe the "choice of contract was wrong." Rule and Aspin blasted the affair as a coverup, but the contract already was in the hands of EB, which continued to be baffled by the Navy's insistence on the fixed-price type. Said William Gourvine, counsel for EB, on the reason for the insistence on the fixed-price contract: "My more-than-belief is that it was Admiral Rickover." Thus, at the outset of construction, Trident was locked into constant controversy and cost overruns were guaranteed because a realistic price never was established.[10]

1974-1982

One major problem that progressively influenced congressional and public perception of the Trident—inflation—could not be blamed entirely on the Navy, even though several times congressmen clashed with Navy spokesmen over their estimates for inflation. During the 1974 to 1976 period, when Trident costs actually started to be realized, the Navy figured costs would increase at a rate of 7.9 percent. Such an estimate simply did not take into account prospective post-1976 rates and clearly did not include compound effects.[11]

Inflation, in turn, greatly exacerbated the problem of force levels, about which the Navy was less than candid. It appears a goal of ten vessels was established early in the program, although EB received indications the class would run only to seven. By the end of the decade, it was clear to all involved that a much larger force than ten—somewhere in the neighborhood of twenty-five to twenty-nine boats—would be needed to replace the Polaris-Poseidon fleet. Hence, the Navy missed opportunities for additional economies of scale in the early long-lead contracts in an amount of some $943 million, up to 31 December 1982. Again, neither this problem nor inflation hindered Polaris in any substantial way. First, inflation was much lower during Polaris' construction. Next, construction time itself was much shorter because of its relatively simple design, and the design conversion to incorporate ballistic missiles was much less complicated than dealing with an entire range of new systems, from reactor to sonar.[12]

Trident required something else Polaris had not needed—new basing. The size of the submarine made existing bases obsolete for servicing Tridents and, when combined with the increased range of the Trident I missile, it made all

foreign basing of the sub unnecessary, since all targets would be well within range from near our domestic shores. Consequently, another component of the Trident package was the construction of a new naval base at Bangor, Washington, near Bremerton. Spain somewhat unwittingly contributed to enhancing the global scope of Trident's capability by demanding in the late 1970s that the United States withdraw its Polaris-Poseidon squadron from Rota. Navy planners accordingly took advantage of the Spanish request by asking for authorization to build a Trident base for Atlantic deployment of Tridents at Kings Bay, Georgia.[13]

By 1977, the entire program generally seemed to be running along smoothly. Yet major problems were brewing. Upon receiving the major contract, EB had greatly expanded its work force, going from 11,000 in 1972 to 25,000 by 1977. Those job-hungry trades workers who poured in on the heels of the contract's activation lacked the necessary shipbuilding skills and taxed both the training and supervisory capacities of the yard. According to Stanley Eno, a former labor-relations manager for the shipyard, the firm hired "women, minorities, and the hard-core unemployed." As a result, "drugs, alcoholism, sex and discrimination incidents became a way of life" and "unrest, fights and problems [occurred] as people tried to learn shipbuilding trades." These "growing pains" were "unbelievable." Blame generally rested on the shoulders of Electric Boat's management. A machinists' union official testified that workers were "constantly demeaned, harassed, misdirected and blamed as a smoke-screen for management to cover their [*sic*] accounting manipulations with the Navy." Eno added that the "workers, supervisors and others [were] trying to look busy for 8 hours a day either because of lack of materials or lack of direction by management." Productivity at the shipyard dropped, thanks to an adverse proportion of skilled to nonskilled personnel, which eroded from 62 percent in January 1976, to 55 percent in June 1976, and to 49 percent in 1977. Contributing to the productivity problems was the inexperience of the newly hired supervisory and management force.[14]

P. Takis Veliotis took over the mantle of management from Joseph Pierce in 1977. Veliotis, a former World War II Greek submariner, whose colorful language features a "classical" accent, immediately reorganized the management at Electric Boat. He discharged 3,500 employees, retrained the supervisory force, and set up a program in managerial skills in conjunction with the University of Hartford. By reducing overhead and support functions he eliminated $126 million in costs through 1981. Additional steps taken to improve management involved taking an inventory of the plant and material stocks, computerizing many of the management and control systems, and reviewing what he considered to be unrealistic schedules and budgets. Veliotis also recognized the importance of avoiding future trade strikes, so after the trades council at Electric Boat elected Thomas Kiddy as

its new president, Veliotis opened negotiations on a new contract. When the two reached an agreement in June 1979, it marked the first time in twenty years Electric Boat had reached a settlement without first experiencing a strike.[15]

Veliotis most likely believed that by this point his corrective actions had solved the major problems, but deeper damage already had been done. On 12 March 1981, Vice Admiral Earl Fowler presented an indictment of EB's work to the House Seapower Subcommittee, claiming EB had used weldable mild carbon steel that "may not be strong enough for its specific end use" in over "126,000 locations" in four different Trident subs. He also alleged EB had performed deficient welds in some 688 *Los Angeles* class subs and, upon subsequent requests for records, the Navy learned EB lacked inspection records on over 26 percent of the *Ohio*'s welds. Besides blaming EB for faulty painting of the ballast tanks, Fowler concluded by criticizing EB's schedule delays and defended the Navy's habit of sending contract revisions to the shipbuilder.[16]

In fact, quite unlike Polaris—where the goal was to mate the missile with the sub and simply get an existing submarine design to sea with a few major alterations—the Navy was in essence experimenting with everything associated with the Trident. Never before had a submarine carried a crew of over 150 plus on patrols. The Trident was designed to be not only bigger than Poseidon subs but also to have greater speed, more quieting protection, and greater damage resistance. In order to achieve greater at-sea availability, a radical new outfitting concept was devised that used a considerable number of interior fixtures and components of a modular design to facilitate their easy removal, replacement, and dockside repair. Consequently, maintenance and port time would be greatly reduced, not only for each mission and each overhaul, but for the entire lifetime of the program as well.[17]

However, all of these innovations caused standard construction problems—a bolt off by an inch, a pipe that is a foot short—and flooded EB with design revisions. Veliotis estimated at one point they came in at a rate of twenty per day. Although many of the changes involved simple blueprint corrections, some required considerable labor and subcomponent fabrication. Even after January 1980, when the *Ohio* entered its final construction phases, Electric Boat received over 2,900 revisions that "required the performance of physical work in the shipyard—not just paper changes."[18]

Finally, government-furnished equipment (GFEs) proved defective in many cases. Turbines developed cracks and had to be replaced, and the new turbines—approved by the Navy—were not balanced and therefore required extensive corrective work. Complicated and novel valves supplied by the Navy failed, and various sealant plugs rusted, leading to a flooding of the *Ohio*'s engine room. EB workers received 8,000 notices of defective GFEs from the Navy inspectors in 1979 and caught many more themselves. Veliotis

estimated that lost work time amounted to 750,000 man-hours for repairing or correcting problems in GFEs; by 1981 the number dropped (2,856), as had man-hours (195,000), but still they remained significant.[19]

EB's responsibility for its own problems can be traced primarily to the massive manpower buildup from 1972 to 1977, with the welding deficiencies, for example, successfully being addressed by the replacement of poorly skilled workers with reliable, trained welders. Furthermore, the Navy greatly exaggerated the scope of the welding deficiencies by its method of counting and measuring the welds. Virtually no deficient welds were in the pressure-hull or reactor areas. EB willingly admitted responsibility for mislabeling the steel, although Veliotis claimed that even the mislabeled steel was tested at levels above necessary tolerance requirements. The shipbuilder blamed the Navy for the defective paint.

The Navy ultimately conceded to its shortcomings in the GFEs. But admitting its responsibility for the contract revisions brought Rickover's "rubber document" into the limelight again, leading to a bitter confrontation between EB and the Navy over (1) reimbursements for revisions, (2) reimbursements for time added by the revisions, (3) an understanding on the necessary subsequent schedule extension, and (4) provisions for inflation during the time lost by EB to GFE repair and revisions.

A great deal of posturing ensued at this point (1980-81), whereby both Secretary of Defense Caspar Weinberger and Secretary of the Navy John Lehman threatened to build Tridents elsewhere (even in foreign yards!), and EB countered by suggesting there might be a work stoppage. The Navy also awarded three *Los Angeles* submarine contracts to Newport News as a stimulus to make EB take "a more compliant stand on the Navy's demands." Rickover personally got involved, assailing EB's management as "so-and-sos" who did not "care if they manufacture horse turds or submarines."[20]

Most of the controversy was resolved in spring 1981, negotiations in which EB received a contract for the ninth Trident in return for an agreement to pay 50 percent on all cost overruns and for a promise to refrain from submitting claims on contractor-caused deficiencies. The Navy already had settled an earlier claims battle involving the 688s to EB's partial satisfaction. All sides engaged in adroit political maneuvering during the controversy, but the bottom line was that EB had the *only* equipment capable of building Tridents in the world—a $540 million capital investment—and gradually both the Navy and EB were working the "bugs" out of the new design. Partly due to the Navy's pressure, partly due to Veliotis's management, and partly due to a GAO audit, the shipbuilder delivered six attack subs and the *Ohio* in 1981, and would deliver two more Tridents in 1982. It continued to push ahead virtually all of its schedules so that by 1983 it had really lost only the time spent sorting out problems on the lead vessel.[21]

However, the theme of "cost overruns" has not disappeared. Typical reports include *Time* magazine "40 percent over the original budget," *U.S. News & World Report* "Trident Budget to Run Further in the Red," government publications "severe cost overruns," *Congressional Issue Brief,* and even sympathetic journals such as *Armed Forces Journal* "Blunted Trident." Polaris escaped such attacks for several reasons: its platform already was basically designed, its hard-core group of advocates often exceeded their administrative authority, they occasionally "hid" funds, and they did not have the fixed-price contract as "divine law" by which they were held accountable. Indeed, when one allows for inflation, the Trident has not been exceedingly costly, and when viewed in light of the capabilities per system, Trident and Polaris simply are not comparable, even on a proportional basis. The Navy could have gained greater credibility by using a cost-plus contract at the outset. Combined with a more gradual and careful buildup at EB, many of the subsequent construction difficulties and much of the media attention to costs could have been averted. But SALT-I and its constraints made a replacement of the Polaris-Poseidon force imperative, and Laird's acceleration order forced EB to aim for a deadline that, in the end, proved impossible to meet.[22]

Ultimately, Trident's costs vis-à-vis Polaris are measured only in its effectiveness as a deterrent, and to this extent Polaris evidently has been worth every penny expended during its life span. In more traditional measurements, however, the final bill for Trident probably is both greater than most people suspect and yet reasonable. When the cost of the bases, auxiliary facilities, related research on subsystems, and the unclaimed costs are counted, Trident is the single most expensive weapon currently deployed. If, however, the effects of inflation are wrung out, and if one measures the additional security gained by US basing, the Trident's costs are better put in perspective. Most important, however, are the possibilities the Trident hull offers with its amazing size and diving capabilities. Eventually it may serve as the model for new underwater tankers, may become the next great freighter series, or may perform a number of military uses just now being contemplated. All things considered, the Trident is to the Polaris what the B-1 bomber is to the B-36.[23]

Notes

1. This paper was prepared from material in the authors' book, *Trident* (Carbondale: Southern Illinois University Press, 1984). For procurement comparisons with other programs, see Robert Art, *The TFX Decision: McNamara and the Military* (Boston: Little, Brown, 1968); Robert Coulam, *Illusions of Choice: The F-111 and the Problems of Weapons Acquisition Reform* (Princeton, N.J.: Princeton University Press, 1977); Ingemar Dörfer, *System 37 Viggen: Arms Technology and the Domestication of Glory* (Oslo: Universitetsforlaget, 1973); Robert Kaufman, *The War Profiteers* (New York: Bobbs-Merrill, 1970). For descriptions of the Trident, see *The Trident System* (Washington: Navy Department, Trident System Project Office, 1977); Norman Polmar, "The U.S. Navy: Strategic Missile Submarines," US Naval Institute *Proceedings*, March 1980, pp. 141–42. For Polaris, see Harvey Sapolsky, *The Polaris System Development: Bureaucratic and*

Programmatic Process in Government (Cambridge, Mass.: Harvard University Press, 1972); J.J. DiCerto, *Missile Base Beneath the Sea: The Story of Polaris* (New York: St. Martin's Press, 1967); Baar and William Howard, *Polaris!* (New York: Harcourt, Brace & World, 1960). For general developments in the postwar Navy, see Richard Hewlett and Francis Duncan, *Nuclear Navy* (Chicago: University of Chicago Press, 1974), and Norman Polmar and Thomas Allen, *Rickover: Controversy and Genius* (New York: Simon & Schuster, 1982).

2. *Trident System*, passim; Interviews with P. Takis Veliotis, various dates, 1981-1982.

3. Polmar and Allen, pp. 564-66; James Canan, *The Superwarriors: The Fantastic World of Pentagon Superweapons* (New York: Weybright & Talley, 1975); Morton Mintz, "Depth Charge," *Washington Post*, 4 October 1981; William Whitmore, "The Origin of Polaris," US Naval Institute *Proceedings*, March 1980, pp. 56-59.

4. Sapolsky, pp. 11, 41-48; Mintz; *Senate Hearings*, Armed Services Committee, Subcommittee on Research and Development, 95th Cong., 1st Sess., 5 April 1977, statements of Admirals Don Harvey, Albert Kelln, and J.C. Metzel, p. 6660; Polmar and Allen, pp. 566-67.

5. Polmar and Allen, pp. 566-67; Elmo Zumwalt, *On Watch* (New York: Quadrangle Books, 1976), pp. 156-57.

6. *House Hearings*, Armed Services Committee, Subcommittee on Research and Development, 92d Cong., 2d Sess., 1 March 1972, statements of Admirals H.E. Lyon and Robert Kaufman, p. 2636; *Senate Hearings*, Armed Services Committee, Ad Hoc Committee on Research and Development, 92d Cong., 2d Sess., statements of Admirals Beshany and Kaufman, 22 March 1972, pp. 2651-60.

7. For examples of opponents' arguments, see *House Hearings*, 1972, pp. 2642-47 and Fiscal Year 1973 R.D.T. & E., N Program Data—Submarine System; Dr. Morton Halpern, "Sea Power Comes Back into Its Own," quoted in *Senate Hearings*, Armed Services Committee, 92d Cong., 2d Sess., 1972, p. 2649; *Senate Hearings*, Armed Services Committee, Ad Hoc Subcommittee on Research and Development, 22 March 1972, statement of Admiral Kaufman, p. 3192; *Congressional Quarterly*, 5 August 1972, p. 1964; *Ibid.*, 31 March 1973, pp. 712-13; *Senate Hearings*, Armed Services Committee, 92d Cong., 2d Sess., 9 March 1972, statement of Dr. Herbert Scoville.

8. Mintz; Jacques Gansler, *The Defense Industry* (Cambridge, Mass.: M.I.T. Press, 1980), pp. 84, 138-39; J.R. Hiller and R.D. Tollison, "Incentive vs. Cost-Plus Contracts in Defense Procurement," *Journal of Industrial Economics*, 26: (1973) 239-48.

9. Mintz; Interviews with P. Takis Veliotis, various dates, 1981-82; Interviews with O.B. Nelson, varions dates, 1981-82.

10. Mintz; Polmar and Allen, pp. 570-71.

11. *House Hearings*, Armed Services Committee, Research and Development Subcommittee, 13 March 1975, statements of H. Tyler Marcy, Assistant Secretary of the Navy for Research and Development, and Admiral John Nicholson, p. 4570; *House Hearings*, Armed Services Committee, Subcommittee on Research and Development, 26 February 1976, pp. 857-859, statements of Admirals Albert Kelln and J.C. Metzel.

12. *House Hearings*, Armed Services Committee, Subcommittee on Research and Development, 94th Cong., 2d Sess., 26 February 1976, statement of Rear Admiral Kelln, pp. 857-58; *House Hearings*, Armed Services Committee, Subcommittee on Research and Development, 94th Cong., 1st Sess., statement of H. Tyler Marcy, p. 4570; *Department of Defense Annual Report, 1975*, Table 1. One way to determine the additional cost is to use a formula for compound inflation (.08) for the cost of raw materials for the three additional boats purchased. Thus (3 x $343.8 million) (.08) = $91.2 million times 10 years = $912 million (*Trident*, chap. 4). Of course, the figure of 8.85 percent for compound inflation is somewhat subjective, and the debate over what constitutes true inflation rages on.

13. For a discussion of Trident's bases, see *Trident System*, p. 7; *Congressional Quarterly*, 31 March 1973, p. 713; *House Hearings*, Armed Services Committee, Subcommittee on Military Installations and Facilities, 94th Cong., 1st Sess., 12 May 1975, statement of Admiral H.E. Lyon, pp. 410-16; *Senate Hearings*, Armed Services Committee, 95th Cong., 1st Sess., 22 March 1975; statements of Admirals J.C. Metzel, A.L. Kelln, and A.R. Marschall, p. 687; *House Hearings*, Armed Services Committee, Subcommittee on Military Installations and Facilities, 94th Cong., 2d Sess., 25 February 1976, statements of Admiral Marschall, and Admiral Metzel, pp. 309-33, 856.

14. Jim Davis, "Building the Trident's Home," US Naval Institute *Proceedings*, March 1979, pp. 62-73; *House Hearings*, Appropriations Committee, 97th Cong., 1st Sess., 25 March 1981, statement of P. Takis Veliotis, pp. 1-4; *House Hearings*, Appropriations Committee, 97th Cong., 1st Sess., 5 May 1981, statements of Admiral Hyman Rickover, pp. 9-11, 90, 130, 133, 159, 169; "Sub Cost Overruns Blamed on Drugs, Sex, and Booze," *Boston Globe*, 20 May 1978.

15. *House Hearings*, Appropriations Committee, 97th Cong., 1st Sess., 25 May 1981, statement of P. Takis Veliotis, pp. 1-4.

16. *House Hearings*, Armed Services Committee, Subcommittee on Seapower and Strategic and Critical Material, 97th Cong., 1st Sess., 12 March 1981, statement of Vice Admiral Earl Fowler, pp. 2-17. Fowler produced the following chart for the committee:

Ship	Original Contractor Delivery Date	EB Estimate Feb. 1978	EB Estimate* Aug. 1980	Navy Estimate
726	4/30/79	11/80	6/81	12/81
727	4/30/80	11/81	11/81	9/82
728	12/30/80	7/82	7/82	9/83
729	8/31/81	3/83	3/83	5/84
730	4/30/82	11/83	11/83	1/85
731	12/31/82	7/84	7/84	9/85
732	8/31/83	3/85	3/85	5/86
733	5/31/86			1/87

*Electric Boat advised the Navy in October 1980 that these dates were under review (p. 17).

17. These construction techniques are discussed at length in the authors' *Trident*, chap. 5. Also see Gerard Burke, "To Build Trident," US Naval Institute *Proceedings*, October 1979, pp. 117-20; "Nuclear Submarines" (pamphlet by Electric Boat); "Quonset Point Facility" (pamphlet by Electric Boat). The authors received considerable information on Trident construction from William Bennet, vice-president of the Quonset Point facility (June 1982) and P. Takis Veliotis (various dates).

18. *House Hearings*, Appropriations Committee, 97th Cong., 1st Sess., 25 March 1981, statement of P. Takis Veliotis, pp. 9-13 (figs. 9-15).

19. *Ibid.*

20. A report prepared by the GAO for Congress place the conflicting claims side by side ("Vice Admiral Fowler and P. Takis Veliotis, Side-by-Side," 5 May 1981, in authors' possession); "Navy Says General Dynamics Must Settle Its Claims to Get More Trident Contracts," *Wall Street Journal*, 16 September 1981; "General Dynamics Won't Ask Navy to Pay Costs on Flawed Subs, Wins Chance at Bid," *Wall Street Journal*, 17 September 1981; "Navy, General Dynamics Reconcile Feud," *Wall Street Journal*, 23 October 1981.

21. "Navy, General Dynamics Reconcile Feud;" Representative Charles Bennett to Milton Socolar, acting comptroller general of the United States, 6 April 1982 (in authors' possession); Socolar to Bennett, 19 April 1982, *ibid.*; Statement of Electric Boat Company, A.M. Barton to W.H. Sheley, 24 February 1982, *ibid.*

22. "How to Spend a Trillion: Arming for the '80s," *Time*, 27 July 1981, pp. 6-21; "Inside Story of the Trident Debacle," *U.S. News & World Report*, 12 December 1977, p. 37; "Navy's Trident Sub: One More Massive Miscalculation," *U.S. News & World Report*, 12 December 1977, p. 37; Benjamin Schemmer, "A Blunted Trident," *Armed Forces Journal International*, June 1979, p. 42, and retraction, "All Wet About a Blunted Trident," *Armed Forces Journal International*, April 1980, pp. 36-37, 61-62; Congressional Research Service, *U.S. Defense Industrial Preparedness Issue Brief #IB81109* (Washington: Congressional Research Service, 8 June 1982), p. 5.

23. Alternative uses of the hull are discussed in *Trident*, chap. 12. For example, one Trident could carry at least 200 cruise missiles, could serve as a laser anti-cruise-missile picket ship, or could serve as a particle-beam ABM system.

PROFESSIONAL READING

"The United States will have to learn how to deal with Assad. He is a cautious, deliberate planner skilled in manipulating his regional situation. One of the hidden messages in *Syria* is that an interchange between Washington and Damascus is possible if we understand the historical and cultural motivations of the Syrian government."

Colonel E.V. Badolato, US Marine Corps

Devlin, John F. *Syria: Modern State in an Ancient Land.* Boulder, Colo.: Westview Press, 1983. 140pp. $16.50.

The drawn-out involvement of US Marines in Lebanon has created a need for fresh objective thinking about the region's emerging dominant Arab power, Syria. John F. Devlin, a former CIA analyst, has put together a tightly written, concise book profiling Syria for the Westview Press. Westview is in the process of publishing a series of books containing very useful overviews of each of the countries in the contemporary Middle East.

Devlin covers the formation of modern Syria with a rapid march through its history, land, people and culture in less than 50 pages, no mean feat considering that Phillip K. Hitti's classic study took over 749 pages just to get to WW II. One of the important insights about the Syrians contained in this book is the concept that, since Syria first obtained its independence in 1946, its terms of existence have essentially been established by foreigners and outsiders. Devlin points out that for the past 37 years the Syrians have been struggling to adjust, modify or overturn those foreign restrictions. In considering the present situation in Lebanon and the Golan Heights, it is clear that the Syrian struggle continues.

Colonel Badolato is a member of the Strategic Studies Group at the Naval War College.

In discussing the political dynamics, Devlin gives an incisive look at the pre-Assad era when the coup d'etat was considered to be an integral element in governing the country. *Syria* contains an excellent discussion and analysis of the Ba'ath Party, its apparatus and how the party is thoroughly integrated into all levels of the government and the military. No writings on present-day Syria could be complete without covering the domination of internal affairs by the Alawite religious community and Devlin does a real service here. The Alawites, a little-known minority sect concentrated in the Latakia region, derived their name from Mohammed's son-in-law, Ali, who is similarly revered by the Shiites. Like the Shiites, the Alawites' religious beliefs are considered heretical by the Sunnis who have tried to eradicate them since the eleventh century. The Sunnis allege that the Alawites have defied Mohammed and Ali as part of a holy trinity and that they celebrate some Christian feasts besides. In fact, many Sunnis reject the right of the Alawites to call themselves Muslims. With this background, it is evident that Hafez al Assad, as a member of a despised minority, had to be extremely clever to take over and rule Syria. Devlin describes how, as a young man from the countryside, Assad combined a military career with intense activity in the Ba'ath Party to work his way to the top government post in 1970. Since taking over, Assad has placed mainly relatives and trusted Alawite military officers in key positions to consolidate his grip on the presidency. While the Alawite domination secured his hold on the reins of power, it did not save him from serious internal opposition. This political and religious opposition has frustrated the Assad regime because, despite brutal crackdowns, it has been unable to eliminate antigovernment movements. For example, in February 1982 Muslim fundamentalists sparked an uprising inside the old city of Hamma. Rifaat Assad, the president's brother, led elite counterrevolutionary forces in a two-week battle which resulted in an estimated 20,000 Sunni casualties. This has been typical of the way the Syrian regime has been dealing with the symptoms rather than the essential causes of the problems, such as the high density of provincial minority officials in high national positions, Alawite domination of the government, widespread corruption, and foreign policy mishaps. Nevertheless, Devlin sees no change to business as usual by the Alawites as Hafez al Assad continues to "hang tough" internally.

Syria's foreign affairs are also characterized by frustration at their inability to become the dominant regional power. Only recently, through muddled US efforts to negotiate the withdrawal of foreign forces from Lebanon and opportunistic Soviet support, has Syria been able to work towards its regional objectives. One obvious outcome of the Lebanese situation will be a strengthening of Syria's position. Even though Devlin's book stops short of Lebanon's most recent events, he makes a valid point in describing how Syria, despite having carried the Arab torch for years against

the Israelis, basically stands alone in the Arab world. Its foreign affairs chronology is a history of various unsuccessful attempts at union with other Arab countries: Egypt in 1958, Egypt and Libya in 1971, Iraq in 1978, and Libya in 1980. Also, their efforts to gain allies and offset Arab-Israeli peace initiatives brought about the Steadfastness Front, a loosely knit grouping of Syria, Libya, the Peoples Democratic Republic of Yemen, Algeria and the PLO.

Devlin's view of Syria in the present context of Middle East affairs is broad and insightful. He describes how Syria has emerged as a key player working against US objectives in the region such as the security of Israel, the availability of Gulf oil and the denial of Soviet influence. Assad clearly wants to pull Lebanon into his sphere of influence, and his hard stance in negotiating with the United States has been enhanced by the complete reequipping of his army by Russia and the hold he is gaining over the PLO. In that regard, Syria is likely to obtain its longed-for recognition as the only legitimate patron of the Palestinian cause in any future discussions.

With regard to the Soviets, Devlin gives a frank appraisal that Syria cooperates only because there are great mutual benefits to be obtained, i.e., the Russians get a regional bargaining foothold and Syria gets an assured source of arms. Syria's geostrategic position between the Mediterranean and the Gulf provides Moscow with a very useful client whose serious domestic problems require a powerful friend willing to provide extensive support.

The United States will have to learn how to deal with Assad. He is a cautious, deliberate planner skilled in manipulating his regional situation. One of the hidden messages in *Syria* is that an interchange between Washington and Damascus is possible if we understand the historical and cultural motivations of the Syrian government. *Syria* is an extremely useful book for any US negotiator to have in his pack. I recommend it for anyone interested in trying to understand the Syrian point of view. It points out the huge risks that continued hyperbole and confrontation have for the pragmatic Assad. It also points out that he is *not* a risk-taker and that there are some opportunities to improve our relations if we don't burn our bridges.

International Institute for Strategic Studies. *The Military Balance 1983-1984*. London: 1983. 151pp. $14

The IISS annual *Military Balance* constitutes a major primary source for academic and journalistic commentators on defense and arms control issues. For those of us in service, it would be easy to overlook such unclassified sources since we invariably have access to detailed intelligence products. Yet to engage in meaningful dialogue with civilian commentators, we must be familiar with the data bases which they rely upon.

This year's product is both interesting for what it says and for what it

does not. For example, all reference to a MIRV capability on the Soviet Navy SS-N-6 and SS-N-8 SLBMs is omitted. One would hope that these missiles still are only capable of a single RV or MRV.

Another deletion this year was the Mod 3 for the Soviet SS-20 ballistic missile being considered under theater arms control negotiations. As late as last year the SS-20 was listed as having the capability of a 7400 km range which put all such systems in the category of ICBMs. No explanation for the deletion is obvious.

IISS continues to credit the Soviet Navy with a 1000 km range for the SS-N-12 Sandbox SLCM. This exceeds normal reports and exceeds the maximum permissible range under the SALT II Treaty Protocol. Although the Protocol would have expired by now, IISS states that the SS-N-12 with this range was deployed during the period the Protocol would have been in force had the Treaty been ratified.

A similar problem exists with the IISS range for the AS-3 Kangaroo ALCM. In their SALT data base, the Soviets stated that they had no bombers capable of carrying ALCMs whose range exceeded 600 km. IISS continues to report the maximum range of the AS-3 as 650 km and that this missile can be carried aboard the Bear aircraft. Interestingly, the DoD's *Soviet Military Power* 1st Edition also credited the AS-3 with this 650 km range.

Last year's *Military Balance* had some problems in the analysis section with its calculation of naval forces available to the USSR for a Nato contingency. This year's statistics are improved with forces remaining in the Pacific being within 2 units of those listed as in that fleet under the country statistics. An analysis of Nato and WTO warship hull ages is an interesting addition. IISS concludes that Nato naval forces are both more numerous and in a few cases newer than Soviet counterparts.

In the Soviet Navy section under the country statistics there are some internal inconsistencies regarding principal surface combatants and SSBN deployments. One continuing irritation is that over 100 KGB units are included within the totals of Soviet Navy forces. These could be listed independently as are US Coast Guard units.

This year the Soviet Navy Golf V class is listed but under the reserve category. Its omission last year was one way which the USSR was able to remain below the SALT I limit of 950 SLBM launchers.

Another most interesting addition this year is one word, "including." In the IISS description of Soviet Yankee conversions, this year the sentence reads, "9 Y-I SSBN have been converted to other roles, incl. SSN." It would appear that we can anticipate Yankees reappearing as other than SSNs in the future.

The IISS *Military Balance* remains an interesting document filled with data which naval officers can expect to see in the future. It is not flawless but IISS appears to do their very best to produce a world class primary

source useful to the press and academic communities. The *Military Balance* is well worth the price and time.

JAMES JOHN TRITTEN
Commander, US Navy

Beres, Louis Rene. *Mimicking Sisyphus: America's Countervailing Nuclear Strategy*. Lexington, Mass.: Lexington Books, 1983. $19.95, paper $11.95

"What is to be done?" cries the author, regarding US nuclear strategic problems of 1983. His proposed solutions to this awesome question are no less revolutionary than the solutions proposed for awesome social and economic problems observed by an earlier author in an article entitled *CHTO DELAT?* (*What Is To Be Done?*, Nikolai Lenin, 1902). It is ironic that the revolutionary socio-economic solutions of 1902, implemented in 1917-18, were based on an ideology that produced economic disaster by 1921, the feeding of 10 million Russians by the American Relief Administration by 1922, the rise of Stalin by 1924, the murder of millions in the purges of the 1930s, and eventually the amassing of the greatest military machine in the world.

Today's Soviet nuclear arsenal, constructed from the socio-economic blood of the USSR and aimed by 1902 ideas, have had at least one Soviet-desired effect on author Beres: to strike fear to the point of irrational surrender.

Author Beres confesses his fears and recommends that the United States, as soon as possible and unilaterally if need be, do the following to avoid a certain, horrible nuclear death which could be the only outcome if President Reagan's current nuclear policy and strategy are continued:

1. Initiate a Comprehensive Test Ban to prohibit all nuclear explosions in all environments. Beres would depend upon "imitation and reciprocity," "the Soviet Union [paralleling] American nuclear concessions," and the United States taking "unilateral steps that would demonstrate its good faith."

2. Adopt a No-First-Use Pledge, which would give immediate military advantage to that country with the larger conventional forces. With an odd convolution in logic, author Beres, who lauds the Soviet no-first-use pledge of June 1982, then suggests that the United States has an active " . . . policy of first use [which] offers incentives to the USSR to undertake a preemptive nuclear strike against the U.S." In other words, the Soviets have promised not to use nuclear weapons first, but if they do, the "devil [U.S.] made me do it!"

3. Undertake a Joint Nuclear Freeze, even if the United States must do the "joint" freeze unilaterally.

4. Establish Nuclear-Weapon-Free Zones. For example, the USSR would like to establish a Northern European Nuclear-Free Zone agreement with Nato Allies Norway and Denmark, and with neutrals Sweden and Finland. As for those Soviet nuclear weapons on the adjacent Kola Peninsula, Scandinavians should only think of themselves as under the peaceful Soviet nuclear umbrella.

It is appropriate that author Beres selected a mythological character to set the title and tone of his little book. If the United States will have " . . . faith in the new forms of international interaction" we will, hand in hand with the peace-loving Soviets, " . . . fulfill the expectations of a new global society, one based on a more advanced stage of evolutionary development. Why not world government? While the questions surrounding world government are enormously complex, there is really no reason to believe that fundamental transformations of the existing pattern of military force and sovereign authority are an appropriate path to avoidance of nuclear war."

In a word, Beres does not " . . . believe [in] fundamental transformations of existing . . . military . . . and sovereign authority": he believes in a "world federal government . . . [of] disarmed states and a lightly armed world government force."

You need to read this book to understand the mentality of those who would exploit children and children's fears in political demonstrations against current US nuclear defense policy and strategy. And then put it up on your book shelf, right next to *The Myth of Sisyphus* and *Hansel and Gretel.*

MYRL ALLINDER
Colonel, US Marine Corps

Hartigan, Richard Shelly, *The Forgotten Victim: A History of the Civilian.* Chicago, Il.: Precedent, 1982, 177pp. $17.95

"The first ground handful of nitre, sulphur and charcoal drove monk Schwarz's pestle through the ceiling; what will the last do?" Carlyle's questions heads the last chapter of this very useful and well-documented little book. Despite its badly misleading title and crude cartoon frontispiece, the excellent monograph is not a history of civilian casualties in war, though it does serve to remind the reader that far more civilians have perished in the wars of history than military personnel. Actually, it is an admirably concise summation of classical just war theory with emphasis on the principle of discrimination, the rule that unarmed civilians should be treated in warfare as innocent and should not be harmed.

Hartigan, a professor of political science in the University of Chicago, focuses his attention on the historical and theological development of the principle of discrimination as laid down by Christian theorists and developed through fifteen centuries of Western civilization. He identifies Augustine as the true founder of just war theory, citing his characterization of just wars as " . . . those which avenge injuries, when the nation or city against which warlike action is to be directed has neglected either to punish wrongs committed by its own citizens or to restore what has been unjustly taken by it."

Good classical man that he was, Augustine tended to identify the citizen with his state, and paid more attention to the conditions under which a just war might licitly be declared (*jus ad bellum*) rather than to the principle of discrimination—one

of the two major rules of *jus in bello*. If innocent people are slain in a just war, says Augustine, that is deplorable but not unpardonable. For God allows the innocent to suffer evil in this life, knowing that proper redress will be made in the next. This harsh doctrine was modified in the Middle Ages by a number of moral theologians. Aquinas follows Augustine in regarding the purpose of a just war as punitive, that is, avenging a major wrong, but spells out the conditions of a just war by expansion, essentially in the form that has come down to us today: the just war must be declared by duly constituted authority and a just cause is required; there must be some chance of winning the war; the good aimed at must be proportionate to the means used to achieve it.

But Aquinas is aware of the problem of the innocent in warfare and introduces the principle of double effect to lift blame from those military commanders engaged in actions in which innocent civilians are unintentionally killed. "The act of self defense," says Aquinas, "can have two effects. One is the saving of one's life, the other is the slaying of the aggressor." By extension the principle may be applied to a military commander whose duty may be to take a certain objective. He knows that in achieving it, innocent civilians will be killed. But he does not intend this, and may regard it as lamentable. Hence his action is not condemnable unless the evil unintentionally done on innocent civilians is disproportionate to the good represented by the taking of the military objective, and known by the commander to be so.

Vitoria, the 16th-century Spanish theologian, makes explicit the principle of proportionality in *jus in bello*. It is never lawful, he says, to kill many innocent persons merely to punish the guilty. The Salamanca scholar knew that the principle of double effect could be misused as double-speak. "It is never right," he says, "to slay the guiltless even as an indirect and unintended result except where there is no other means of carrying on the operation of a just war."

With Vitoria and Suárez as mediators between medieval scholasticism and 17th-century philosophy of law, the author leads us to Grotius, Vattel, and the other natural law theorists who, in the name of reason, as well as Christian charity, tried hard to humanize the usages of war and to get something of this humanity into international law. Such an effort was badly needed, for the Thirty Years War had more than decimated the civilian population of Europe. Yet for all the influence of the Enlightenment that followed, the injection of ideology into national conflict via the French Revolution and the introduction of the levée en masse as a means of conscription, heated up both the idea and actuality of total war with all its entailed suffering of civilian populations.

Hartigan recalls that the first military published code governing the conduct of armies in the field toward civilian populations was drafted for the Union Army in the American Civil War by Columbia College professor, Francis Lieber. The code was

signed into law by President Lincoln and issued as General Order, Number 100. (See Richard S. Hartigan, Lieber's Code and *The Law of War* (Chicago: Precedent, 1933).)

Hartigan's concluding chapter mentions the two World Wars of our century and their lethal effect on civilian populations. He alludes to the Vietnam war with particular reference to the difficulty in that bitter conflict of distinguishing between civilians and lawful combatants. Finally he raises the question of sanity as well as of morality of nuclear warfare which he regards (*pace* many informed military technologists) as essentially nondiscriminatory—not forgetting to identify certain strategic bombings of World War II as culpable as well.

Despite the sketchiness of its final chapter, *The Forgotten Victim* makes a useful handbook for anyone who wants just war theory (with emphasis on the principle of discrimination) at a fingertip's reach. It is really surprising how the author has managed to pack into so few pages the essential points of the development of just war doctrine. He has succeeded as well in supporting each point with apt reference to theological and juridical authority, each in turn, backed by what the old rabbis would call, a suitable proof-text. A new edition, a change of title, and a soft-cover format would help this book to reach the wider audience it deserves.

J.G. BRENNAN
Naval War College

Hassler, Warren W. *With Shield and Sword: American Military Affairs, Colonial Times to the Present*. Ames: Iowa State University Press, 1982. 462 pp. $29.50

While the study of US military history has undergone a major transformation and expansion during the past few decades, the field continues to be plagued by a paucity of comprehensive, up-to-date and readable syntheses. In *With Shield and Sword*, Warren W. Hassler has attempted to fill this gap by writing a survey of US military history, from colonial times to the present, which integrates an analysis of military policies and key personalities with the more traditional land, sea, and air operations.

Hassler is well qualified for such an ambitious task. A Professor of History at Pennsylvania State University for nearly thirty years, he has written extensively in the field of US military history, most notably in the areas of the Civil War and the President as Commander in Chief. He has also been a visiting Professor of Military History in the prestigious Morrison chair at the Leavenworth Command and General Staff College and at West Point. His knowledge of the field is comprehensive and outstanding, a fact illustrated not only by the enormous amount of data presented in the text itself, but also by his extensive notes and bibliography and by his use of a very wide variety of unpublished and published primary as well as secondary sources.

In many ways, Hassler is quite successful in providing a comprehensive survey. His 388 pages of text are arranged into fifteen chronological chapters which provide brief but inci-

sive coverage of the country's military campaigns, legislation, theorists, traditions and leaders, both civilian and military. The book is well written, clearly organized, and easy to follow. It offers the reader numerous valuable and balanced conclusions, especially on the strengths and weaknesses of different presidents, service secretaries and commanders, as well as an enormous amount of factual data. Clearly, it is an important synthesis which will be of great value to anyone studying American military history.

Unfortunately, *With Shield and Sword* is also marred by a series of problems which limit its usefulness. The maps included are insufficient in number and inadequate in detail, and some of the coverage is unbalanced. Only one chapter of 33 pages, for example, is devoted to military affairs since 1945. Moreover, the primary emphasis in most of the chapters and in terms of total pages remains the battlefield and its leaders. Other military-related issues are indeed discussed, but those discussions are at times too brief and incomplete, and they are seldom integrated with the more detailed battle analyses. The result is some choppiness and confusion. The traditional American fear of a standing army, for example, is mentioned on numerous occasions but never fully explained. The origins of the cold war are dismissed with a single sentence. And virtually no mention is made of the new social history which has so transformed our study of the military.

Hassler's emphasis on traditional military history is matched by a use of traditional themes and conclusions which, in this author's opinion, is simply not warranted in light of the recent literature he cites. His analyses of the causes of specific wars and military interventions, for example, are quite dated as well as incomplete. Equally dated in light of recent scholarship are his very negative assessments of Jefferson, Madison and Wilson as commanders in chief; as is his central theme that the United States has always been militarily unprepared and has done so well only because of luck and the ability of key individuals to improvise. In effect, this is the old Emory Upton thesis updated, and while it clearly retains some validity, its continued use as the central theme of American military history does not do justice either to recent scholarship or to the facts.

While a welcome synthesis of considerable value to the student, scholar and professional, *With Shield and Sword* is thus a traditional military history which is weakened by a lack of depth and continuity regarding key issues and by its emphasis on traditional themes and conclusions. The lack of depth may very well be an inevitable aspect of such a comprehensive undertaking, and the value of having so much diverse material in a single volume clearly outweighs this shortcoming. One wishes, however, that the author had relied more on the provocative themes and conclusions contained in the recent scholarship he so often cites.

MARK A. STOLER
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Sorley, Lewis. *Arms Transfers under Nixon, A Policy Analysis.* Lexington: University Press of Kentucky, 1983. 231pp. $22

Too many books in recent memory dealing with problems of national defense and security have shown a predilection for focusing on numbers and characteristics of specific weapons systems, as if this were the stuff of strategy and foreign policy. The strength of Lewis Sorley's *Arms Transfers under Nixon* is that he avoids this trap, instead outlining the Nixon administration's foreign policy objectives and then analyzing to what degree arms transfers promoted or frustrated these goals.

The incoming Nixon administration was confronted with a new international environment that placed severe constraints on an activist foreign policy: parity in nuclear armaments with the Soviet Union, international and especially domestic opposition to the Vietnam war, and the beginnings of a new period of American isolationism. These factors combined to present difficulties for the United States in meeting its international obligations and duties. In this situation, military aid became one of the few remaining sources of American influence; arms transfers were thus elevated to "a primary instrument of policy."

Sorley is most cogent when describing arms transfers to Israel and Egypt, the recipients of some $8.5 billion in US military assistance from 1972 to 1974. Sorley argues that the administration's goals of weaning Egypt away from the Soviet Union and creating new "realities" with Israel were due in large measure to the calculated transfer of military equipment to both countries. A subsidiary theme of the book, that arms transfers by themselves count for little in the absence of intelligent diplomacy, comes through most clearly in this section.

If arms transfers were a necessary adjunct to US success in the Middle East, they were a cause of divisiveness among America's European allies. The arms trade with western Europe was "the most counterproductive aspect of US arms transfer policy" in the Nixon administration. American sales to Europe and her competing so aggressively for Third World markets undermined the viability of European arms manufacturers (to whom exports were essential in depreciating research and development expenses and in defraying unit costs). Here poor arms transfer policies made for poor diplomacy with allied governments.

Arms transfers to Latin America, Africa, and Asia (excepting Southeast Asia, which is not discussed), are handled in one all-too-brief chapter. Sorley offers the valuable lesson that at least in the Latin American case, US abstention in transferring arms had no effect on recipients' intentions; the Latin American countries simply shifted to alternative suppliers. The author concludes with the interesting prediction that the boom period of arms transfers may be coming to a close, due to the growth of indigenous arms production capabilities, the decreased cost of some weapons systems particularly well-suited to the needs of the developing countries, and

the financial constraints imposed by increasing debt burdens.

Arms Transfers under Nixon does contain some weaknesses. Sorley displays the annoying habit of dismissing certain issues after devoting insufficient attention to them. Surely the Angola case study deserves more than five paragraphs? Iran, where the Nixon policy of unrestrained arms transfers attracted much criticism, is not treated adequately. Possible limitations on the utility of arms transfers, as President Carter discovered with South Korea, are not discussed. The problem of reverse linkage between clients and suppliers is not mentioned.

What *Arms Transfers under Nixon* does do well, however, is make the useful point that leverage in controlling arms races and limiting conflicts can only come from a policy of selling arms. And, at a higher conceptual level, it reminds us that all defense decisions rightfully belong within the larger framework of foreign policy formulations.

MITCHELL REISS
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Harkavy, Robert E. *Great Power Competition for Overseas Bases: The Geopolitics of Access Diplomacy*. New York: Pergamon Press, 1982. 368pp. $34.50

Robert Harkavy, a political scientist at Pennsylvania State University, has produced an ambitious work about the struggle among the great powers for access to overseas bases. This important subject did not receive adequate attention during the 1950s and 1960s. The "behavioral revolution" consumed the energies of scholars treating international relations while strategic thinkers concentrated on subjects such as deterrence, limited warfare, and counterinsurgency. More recently crises such as those in Iran, Afghanistan, and the Horn of Africa have revived interest in access to overseas bases. Harkavy believes that a study of this subject is one way of understanding "the broader contours of contemporary strategy and the long-range evolvement of the major powers' global power balance," a means of coping with what he calls the "current malaise" in American strategic thought.

Chapters 3-5, the heart of this book, provide a grand compendium of highly useful information about the basing policies of all the great powers since the First World War. Harkavy treats the interwar period (1919-1939), the early post-World War II years to the 1960s, and finally the "modern era." The fruit of this historical survey is a "secular trend" that is summarized neatly: "the basis of access first shifted from colonial control to military alliances, and then somewhat from the latter to various forms of quid pro quo, often in the absence of formal alliances. Though it is by no means the entire story, the evolving nexus between arms transfers and access to facilities has been central to the more recent changes."

Harkavy makes explicit use of "systems theory" as derived from Morton Kaplan and Richard Rose-

crance. This approach, he writes, "involves the division of diplomatic history into more or less discrete eras . . . demarcated by major wars or by other significant watershed events." So far, so good. Historians do this sort of thing all the time. But further, "bracketed by such watersheds, historical epochs can then be compared according to a variety of general characteristics . . . which in one way or another would be applicable or germane to any period." Even better! Many comparative historians approach their subjects in this fashion, although not always as rigorously as Harkavy, Rosecrance, and Kaplan. The author sensibly concludes that he has in mind "a very flexible framework for comparative history with a long-term historical dimension," a statement that all should welcome.

Running through this book is a discussion of geopolitics as a mode of analysis along with comment on the status of geopolitical relations at various times in the past. This emphasis is entirely appropriate. The study of access to overseas bases instantly leads to geopolitics, construed generally as the relationship between international power and geography, as the field is described by the geographer Saul Cohen. Harkavy comments extensively on the views of geopolitical pioneers such as Mahan, Mackinder, and Haushofer, and he also summarizes the ideas advanced by contemporary practitioners such as Robert Walters, Colin Gray, and Geoffrey Kemp. He believes that contemporary changes in the environment require significant revisions of traditional geopolitical views. The old analyses, he suggests, assumed a clearly defined line separating the traditional contestants in geopolitical struggles—the heartland powers and the rimland and/or insular powers. In our time the pattern is "much more dispersed and diffused." The principal heartland power, the USSR, has overflowed the traditional line by establishing bases around the world and seeking to develop a blue-water navy.

What judgment can be made of this work? The subject matter is of great importance; those who neglect the relations between power and geography are largely precluded from making useful contributions to the study of international power relations. Welcome also is the sensitivity to historical analysis inherent in Harkavy's version of the "systems approach." Only two quibbles need be noted here.

One has to do with the tendency for black despair that so often colors geopolitical analyses. Harkavy escapes this vice to a degree—much more so than dour practitioners such as Colin Gray. It is entirely possible to derive a certain optimism about the future from geopolitical analysis rather than the prevailing alarmism and pessimism. Most geopoliticians, including Harkavy, discern a disadvantageous alteration in the "correlation of forces" that bodes ill for the future of the rimland and insular powers. Those who entertain this view fail to take into account a body

of evidence pointing to the return of a rough balance of power in Eurasia. In a word, the evolving relation between power and geography may be viewed as potentially more and more constraining to potential hegemonizers in Eurasia and more and more favorable to antihegemonic powers. If this outlook should prevail, then the grand strategy of the United States might contain very different prescriptions for the exercise of various elements of national power than are generally entertained in the present school of geopoliticians.

A second reservation has to do with the presentation of this book—it is most difficult to read and absorb. A simple, clear prose style would have helped greatly. Equally useful would have been a more effective effort to subordinate information for greater ease of interpretation. The reader is so inundated with data that its meaning is often missed, especially when presented in complicated sentences loaded with clutter.

Despite these problems it behooves serious students of the field to stay with this book. It is an impressive contribution to almost any person interested in national security policy. Its careful, responsible theoretical basis should force serious thinking of geopolitical approaches to international relations.

DAVID F. TRASK
US Army Center of Military History
Washington, DC

Green, N.A. Maryan. *International Law: Law of Peace.* White Plains, N.Y.: Sheridan House, 1982. 2nd ed. 340pp. $26.50

For many years (and through many editions) J.L. Brierly's *The Law of Nations* was almost the standard text to be recommended to the newcomer to the study of international law, including the layman motivated only by an academic interest in the subject. The sixth and last edition of that work, edited by Sir Humphrey Waldock after Brierly's death, was published in 1963. Needless to say, there have been many important developments in international law during the two decades which have elapsed since that date. In 1970 Michael Akehurst's *A Modern Introduction to International Law* made its appearance; and its fourth edition was published in 1982. Continuing the English tradition, in 1973 the first edition of the book under review appeared; and now we have its second edition. All of which indicates that there is a specific need for well-written, lucid, and fairly easily understood, texts on international law. Maryan Green's *International Law: Law of Peace* definitely comes within that category.

The format adopted by the author includes the use of catchwords and rubrics followed by definitions or short explanatory statements. While this process can result in misleading oversimplification, Mr. Green has successfully avoided this pitfall with the result that the layman or the neophyte in the field of international law (a class which includes the vast majority of lawyers) will have little difficulty in locating and in under-

standing the answer to any question which he may have with respect to the area of international law covered—provided, of course, that the question is as comparatively simple as the answer will be. In other words, excellent as it is, this book is not a "do-it-yourself" manual.

This volume was published in 1982. Understandably, therefore, much of the discussion of the law of the sea is based upon the "Informal Composite Negotiating Text," rather than upon the actual Convention on the Law of the Sea signed at Montego Bay, Jamaica, on 10 December 1982. However, this does not greatly detract from its value as there are no substantive differences between the two texts insofar as the subjects discussed are concerned. In appropriate instances the author provides the reader with a caveat. For example, concerning the controversial Part XI of the Convention ("The Area"), he warns (at 188): "This ambitious part of the proposed convention has not yet received sufficient support for it to be possible to state whether these provisions will become part of the new international order." Inasmuch as it takes from the few to give to the many, it seems inevitable that it will become part of the "new international order." In that case we will face the problem as to whether such a treaty, ratified or adhered to by the many, can become customary international law, binding on non-Parties.

Mr. Green advises us that he plans a companion volume on the *Law of War*. This reviewer looks forward with anticipation to the publication of such a volume. Perhaps by the simplicity of his presentation he will be able to convince his readers that they should give an affirmative answer to the oft-repeated question—is there any?

HOWARD S. LEVIE
Professor Emeritus of Law

RECENT BOOKS

Selected Accessions of the Naval War College Library

Annotated by

George Scheck, Mary Ann Varoutsos, and Jane Viti

Lider, Julian. *Military Theory: Concept, Structure, Problems.* New York: St. Martin's Press, 1983. 476pp. $35.00

Sponsored by the Swedish Institute of International Affairs, this study is structured around three problems in military theory: What is military force? How should it be used effectively (both in peace and war)? How should one prepare it for effective use? Each section includes a description of the state of research in both Western and

Marxist-Leninist schools of thought; a proposal concerning the structure of military thinking in that field; and a discussion of issues relating to the prevention of war. The concluding chapter, which outlines the conceptual framework and scientific character of military theory, is followed by a selected bibliography of relevant literature published after the Second World War.

Looney, Robert E. *Economic Origins of the Iranian Revolution.* New York: Pergamon Press, 1982. 303pp. $32.50

This study argues that the causes of the Iranian Revolution can be traced directly to a set of economically related factors. Professor Looney examines Iranian economic strategy from 1965 to 1977 pointing out its strengths as well as its shortcomings. Massive economic and demographic changes took place. In his opinion the plans for development were well-conceived, but failed due to improper implementation and the inequities caused by initial success. The government failed to recognize the resulting socioeconomic tensions that caused disharmony and discontent and that led to the 1978-1979 upheaval.

McCaskey, Michael B. *The Executive Challenge; Managing Change and Ambiguity.* Marshfield, Mass.: Pitman, 1982. 231pp. $14.95

Using five case studies to illusrrate his thesis, McCaskey (a professor at Harvard Business School) has prepared a guide for managers dealing with poorly defined problems dnring conditions of uncertainty. His solurion to treating ambiguous, shifting problems consists of a three-part process: mapping stress, and creativity. First, a synthesis is made of past research findings and practical considerations; the case is then studied in depth; and, finally, the original principles and concepts are reformulated in light of the specifics of the case. *The Executive Challenge*, organized according to these steps, concludes with an overview of the principles illustrated in all of the cases, highlighting common patterns and summarizing the implications of the research.

Middleton, Drew. *Crossroads of Modern Warfare.* Garden City, N.Y.: Doubleday, 1983. 320pp. $17.95

Utilizing the format of decisive battles, the author lists what he considers are the major encounters of the 20th century. The criteria for selection were engagements that were clearly turning points in history or battles that changed the nature of war by the introduction or exploitation of new technology. Starting with the naval engagement "Tsushima," and ending with the "Yom Kippur War," there are 16 major battles under discussion. Some of the battles are obviously well known, while others are more obscure such as "Imphal-Kohima," a World War II battle in which the Japanese Fifteenth Army was crushed.

Miller, Stuart C. *"Benevolent Assimilation": the American Conquest of the Philippines, 1899-1903.* New Haven, Conn.: Yale University Press, 1982. 340pp. $25.00

At the rurn of the century, the American policy of expansion overseas was put to a test when the Philippine Islands were ceded to the United States following the Spanish-American War. This account of American intervention in the Philippines begins by addressing the difficult problem of defining "imperialism" as an analytical

concept, since it is an emotion-laden term used in a variety of circumstances. The imperialist-anti-imperialist controversy includes questions of international leadership, foreign policy, and economic expansion. The last chapter draws an interesting parallel between America's two wars in Asia—the Philippines and Vietnam.

Mutsu, Munemitsu. *Kenkenroku; a Diplomatic Record of the Sino-Japanese War, 1894-95.* Princeton, N.J.: Princeton University Press, 1982. 318pp. $27.50

Written shortly after the termination of the Sino-Japanese War, this memoir consists of a defense of the Ito government's diplomatic policies. Mutsu, Japan's foreign minister, argues that the territorial concessions made subsequent to the Triple Intervention were unavoidable in light of the international situation. He emphasizes the means by which the cabinet reconciled the requirements of foreign policy with the jingoistic demands of the Japanese populace. Based largely on contemporary diplomatic correspondence, the account presents an inside view of decision making and diplomatic maneuvering in Meiji Japan. This edition, edited and translated by Gordon Mark Berger and sponsored by the Japan Foundation, was originally published by the University of Tokyo Press.

O'Sullivan, Patrick and Miller, Jesse W. *The Geography of Warfare.* New York: St. Martin's Press, 1983. 172pp. $19.95

On the premise that fundamental strategic and tactical problems are, in fact, geographical in nature, the authors attempt to bring to the study of war a distinctly geographic view. Basing the decision whether or not to fight on sound geopolitical realities, the emphasis is on the geography of preparing for war. Some chapters are concerned with logistics, tactics, and terrain in a more or less traditional sense, while those dealing with urban and guerrilla warfare focus on the role of modern cities and suburban areas as geographical factors. Of particular interest is the discussion of the "domino theory" in relation to geopolitics and strategy.

Perl, Raphael. *The Falkland Islands Dispute in International Law and Politics: a Documentary Sourcebook.* New York: Oceana, 1983. 722pp. $45.00

The bulk of this massive volume consists of the texts of 52 documents, dating back to 1493, which relate to the complex legal and political issues surrounding the controversy over the Falkland Islands and dependencies. In addition to the documentary evidence, it contains an analysis of the sources from the perspective of international law and practice. Intended for researchers concerned with determining principles and rules of international law applicable to opposing perceptions of fact, it also includes a historic chronology and a bibliography, which were prepared by Dr. Everette E. Larson. The question of lawful use of force is omitted, however.

Preston, Antony. *Sea Combat off the Falklands.* London: Willow Books, 1982. 207pp. n.p.

Britain's successful war to repossess the Falkland Islands witnessed the largest combined sea and air battles since World War II. Therefore, it should be of great interest to proponents of both air and naval power. Antony Preston's account concentrates on the offshore action and includes descriptions of the battles as well as the individual experiences of some of the participants. His analysis of the weapons,

equipment, and tactics includes some interesting comments on current doctrine and expectations. Also of note are his comments on polyvinyl chlorides (PVCs) and polyester.

Price, Jerome. *The Antinuclear Movement.* Boston: Twayne, 1982. 207pp. $15.95
Nuclear technology is not as safe as was initially assumed. The possibility of nuclear accidents such as Three Mile Island and the problem of what to do with radioactive wastes have become serious issues. The controversy over nuclear power involves questions of environmental safety, moral issues, and nuclear weapons proliferation. This analysis of the antinuclear movement in the United States includes a history of its origins, an explanation of the goals and ideologies of the different groups involved, and an evaluation of the results of the collective action of the movement as a whole.

Province, George M. *The Unknown Patton.* New York: Hippocrene Books, 1983. 261pp. $20.00
In this study, Province reassesses some of the major controversies that arose in regard to General George S. Patton, Jr., providing some interesting information that has not previously been brought to public attention. In this manner he attempts to dispel misconceptions concerning Patton's suitability for higher command. Province portrays Patton as a gifted soldier, who possessed keen perception and unusual intuitive ability. Included are famous quotations and poems written by Patton and the Letters of Introduction that he prepared for circulation among the officers of his command in the European theater during World War II.

Robinson, Francis. *Atlas of the Islamic World since 1500.* New York: Facts on File, 1982. 238pp. $35.00
Fifty-three maps and 302 illustrations enhance this survey of the Islamic world. Its objectives are threefold: to provide the Western reader with a framework for understanding Islamic history, the Islamic way of life, and the spread of Islam into parts of southeast Asia, Africa, central Asia, and Europe. Following a brief outline of Islamic history prior to A.D. 1500, the narrative traces the growth of Islam throughout the next five centuries, emphasizing the way Islamic culture was transmitted from generation to generation and from nation to nation. Attention is also paid to the conflicts between groups within Muslim societies, the interaction between believers and nonbelievers during the process of Islamization, and the unity and diversity found within Islamic tradition.

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The Naval War College has begun to increase contacts with its alumni, so as to promote greater camaraderie, better exchange of information, and added professional enrichment among its graduates and former staff and faculty members.

In the 100 year history of the Naval War College there have been more than 21,000 students, faculty and staff members. They include officers from all uniformed services, from many US government agencies, and from the navies of more than 65 nations.

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Graduates, and former members of the faculty and staff are invited to provide their names and addresses to the Naval War College, Code 4, Newport, RI 02841. Telephone: 401-841-3373. Autoven 948-3373.